

FIG. 1

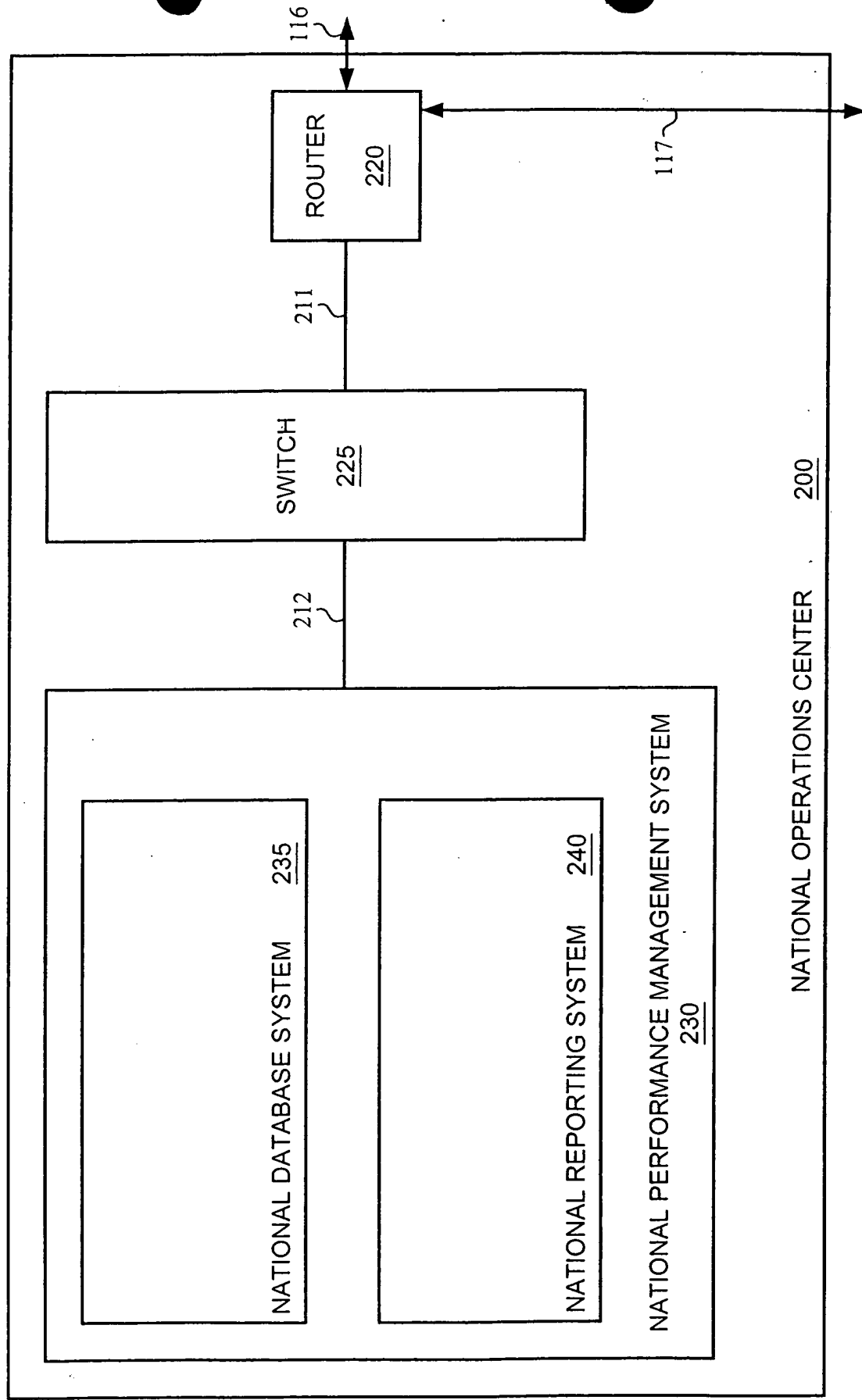


FIG. 2

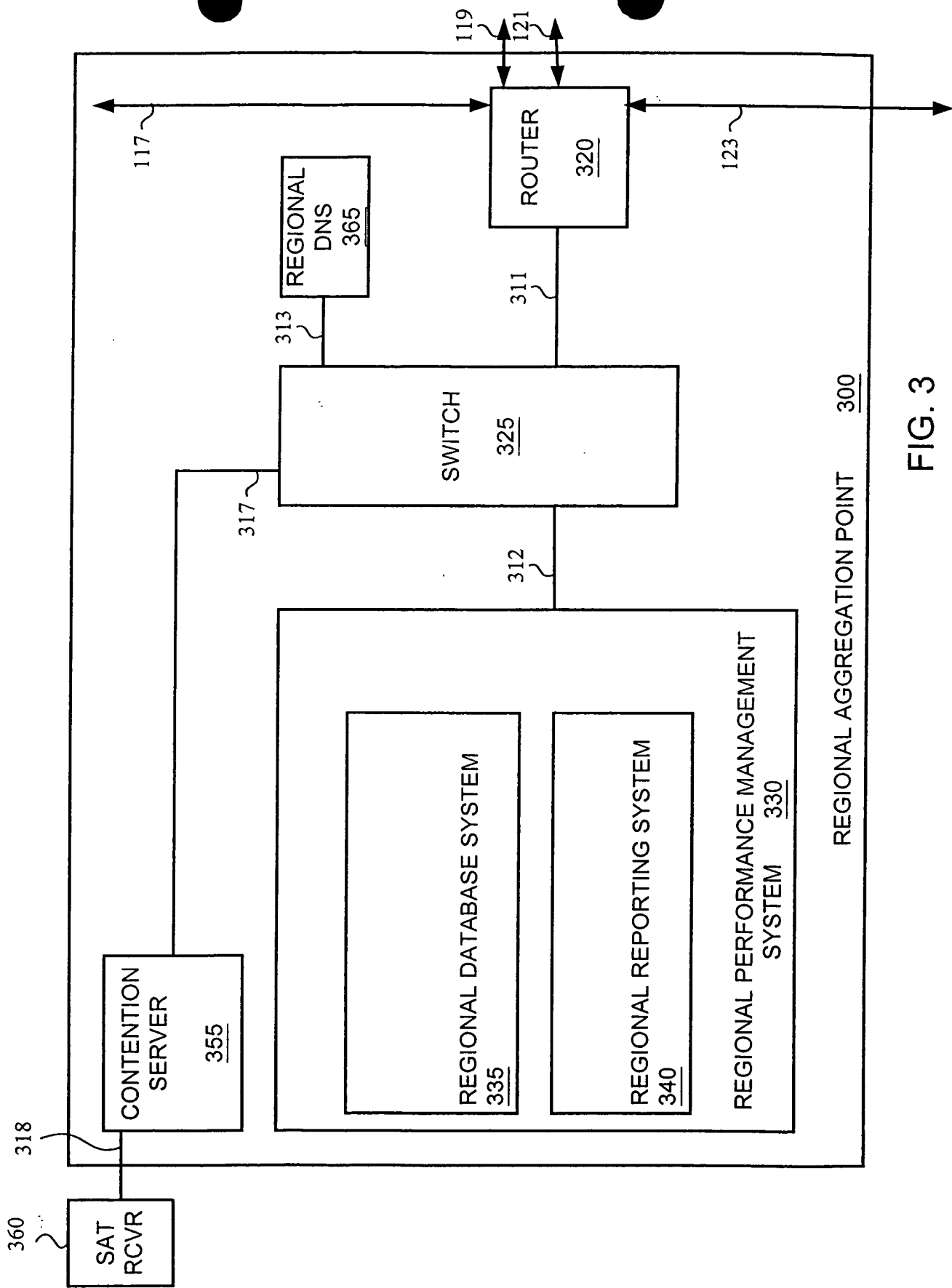


FIG. 3

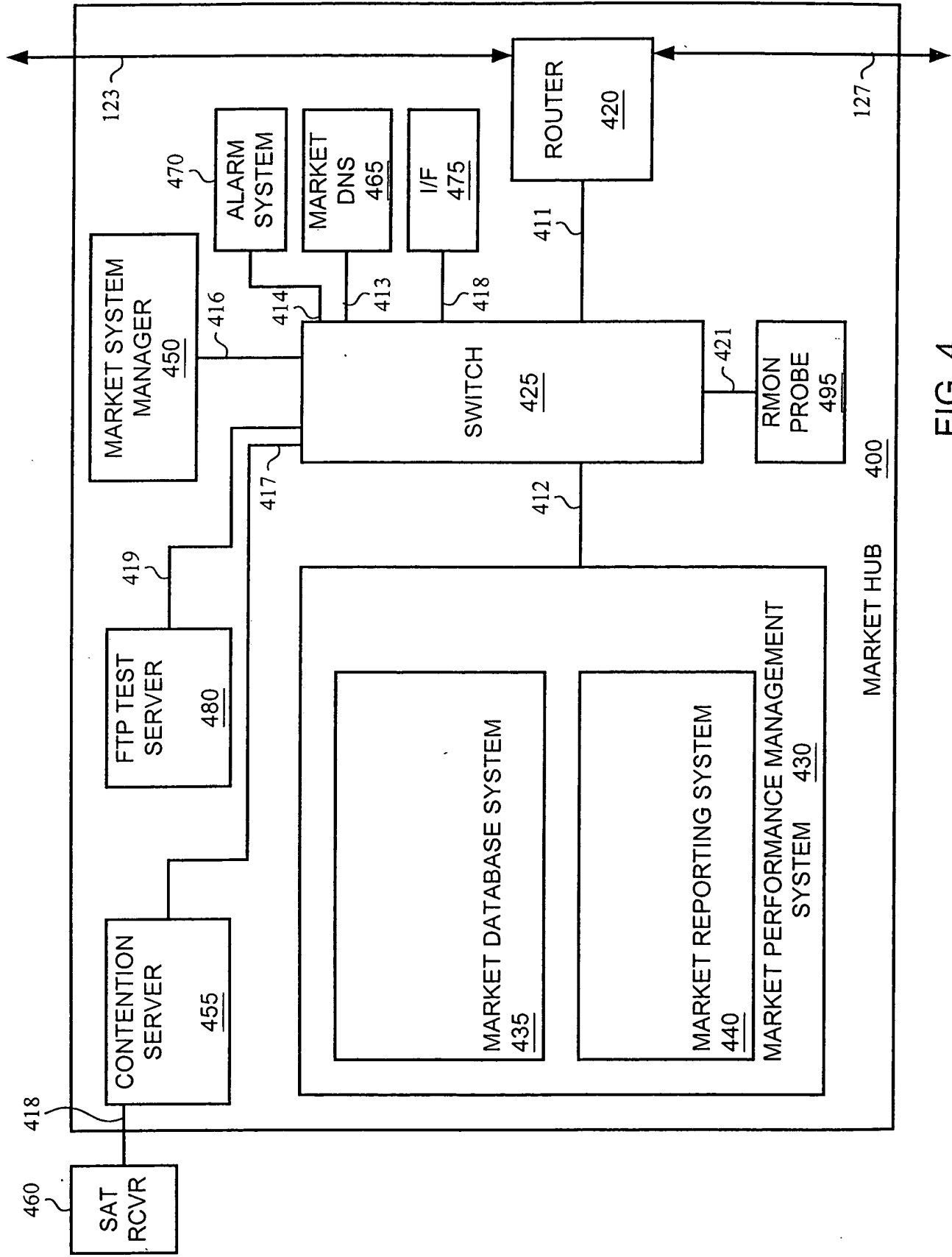
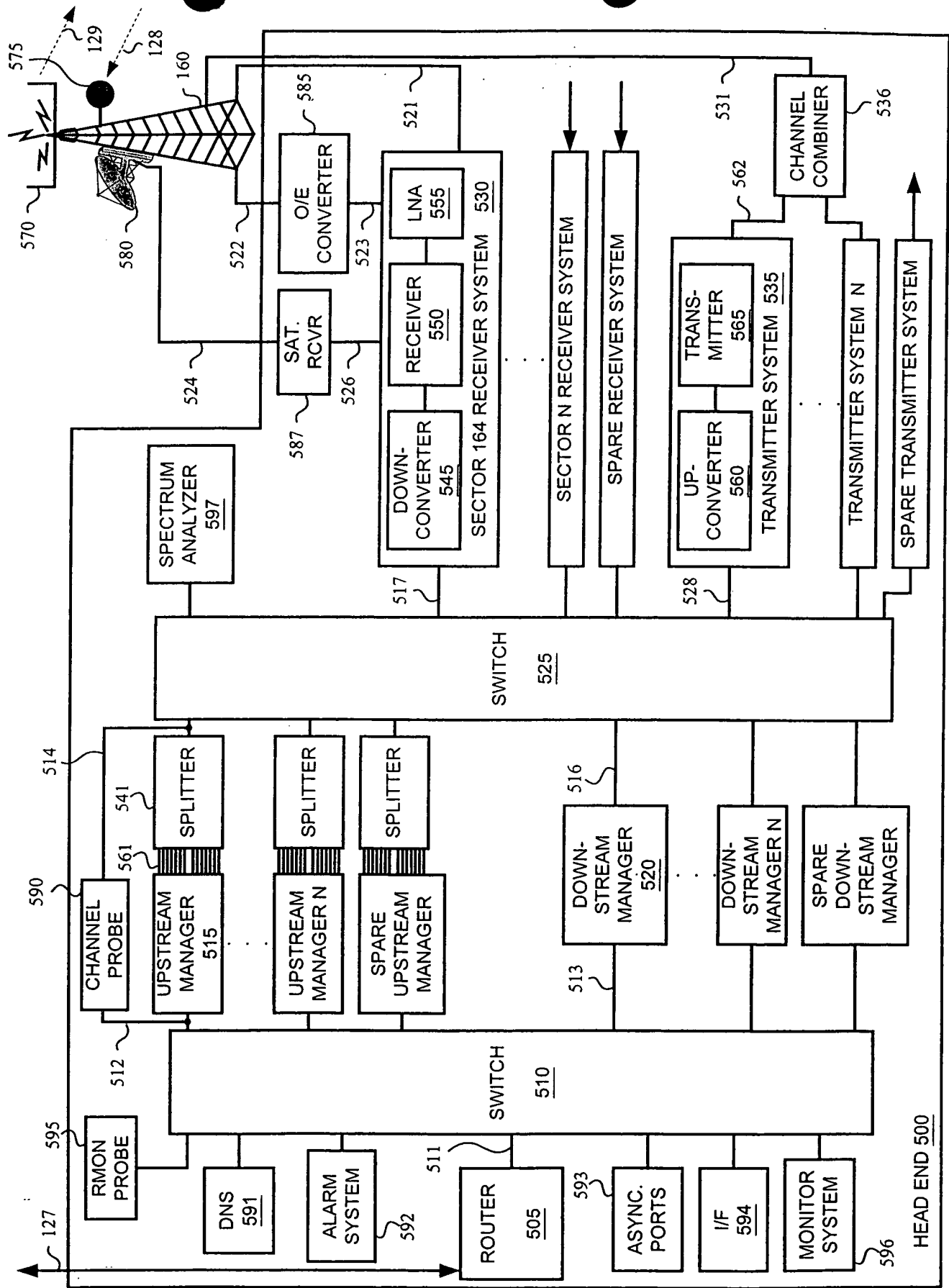


FIG. 4

FIG. 5



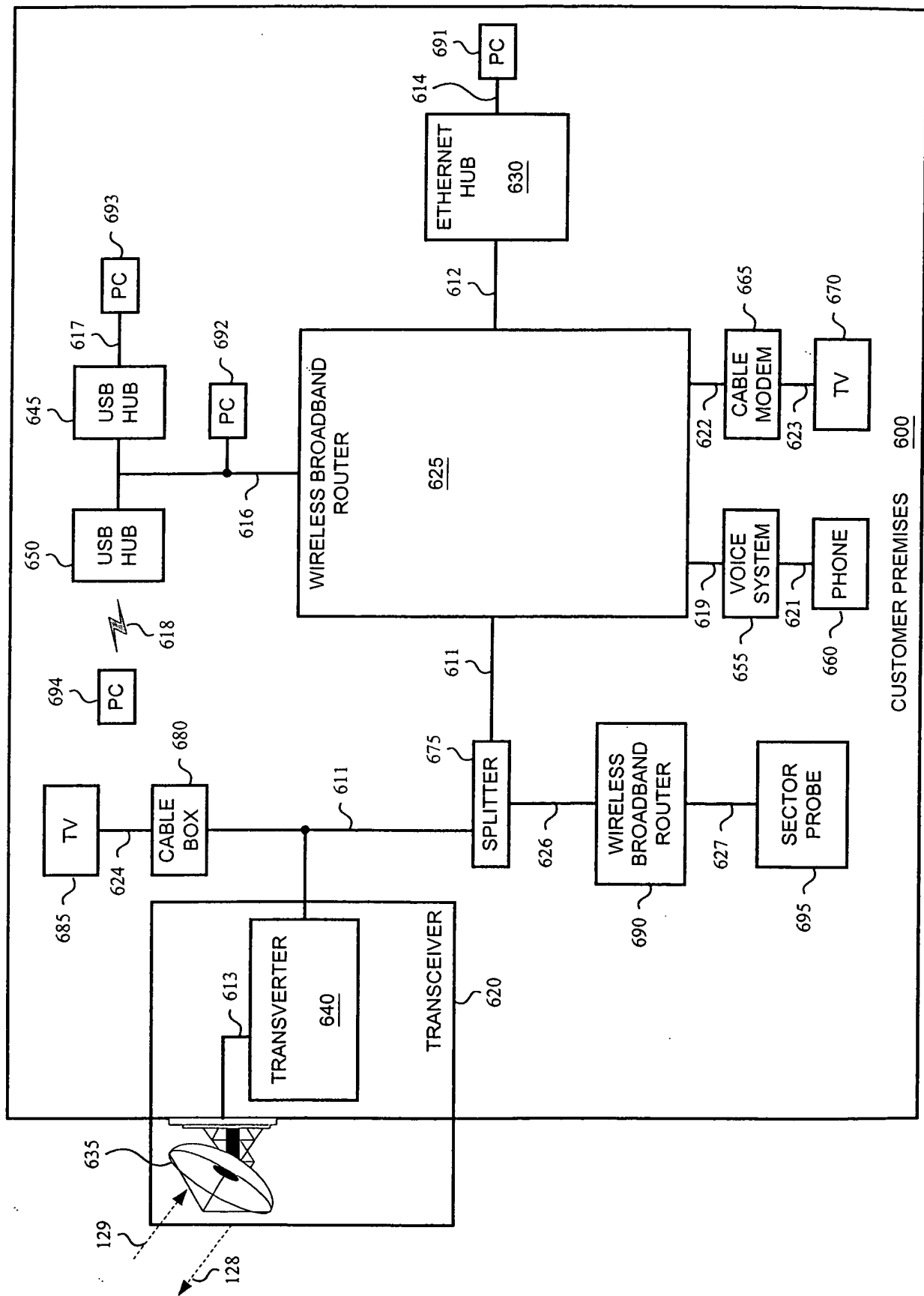


FIG. 6

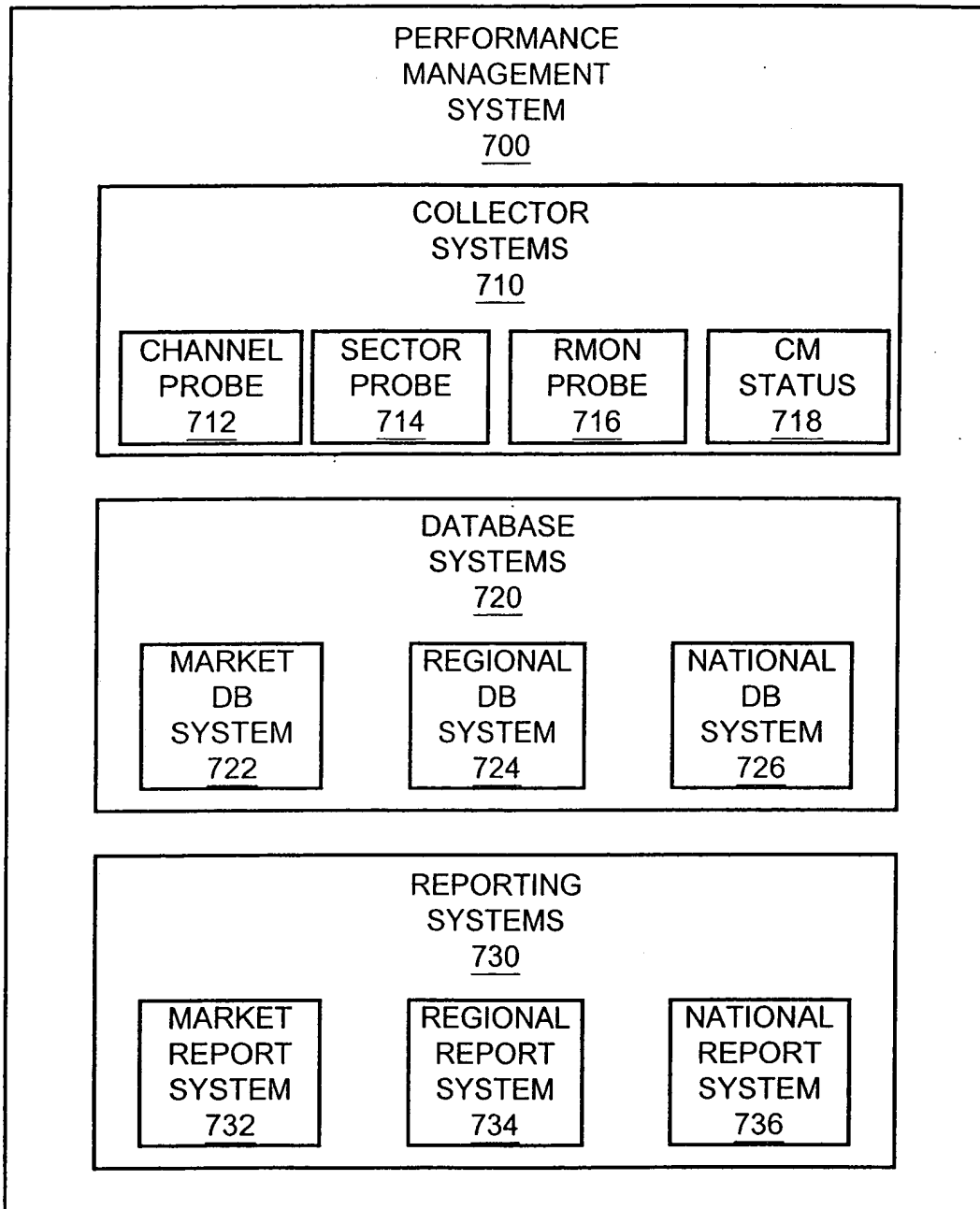


FIG. 7

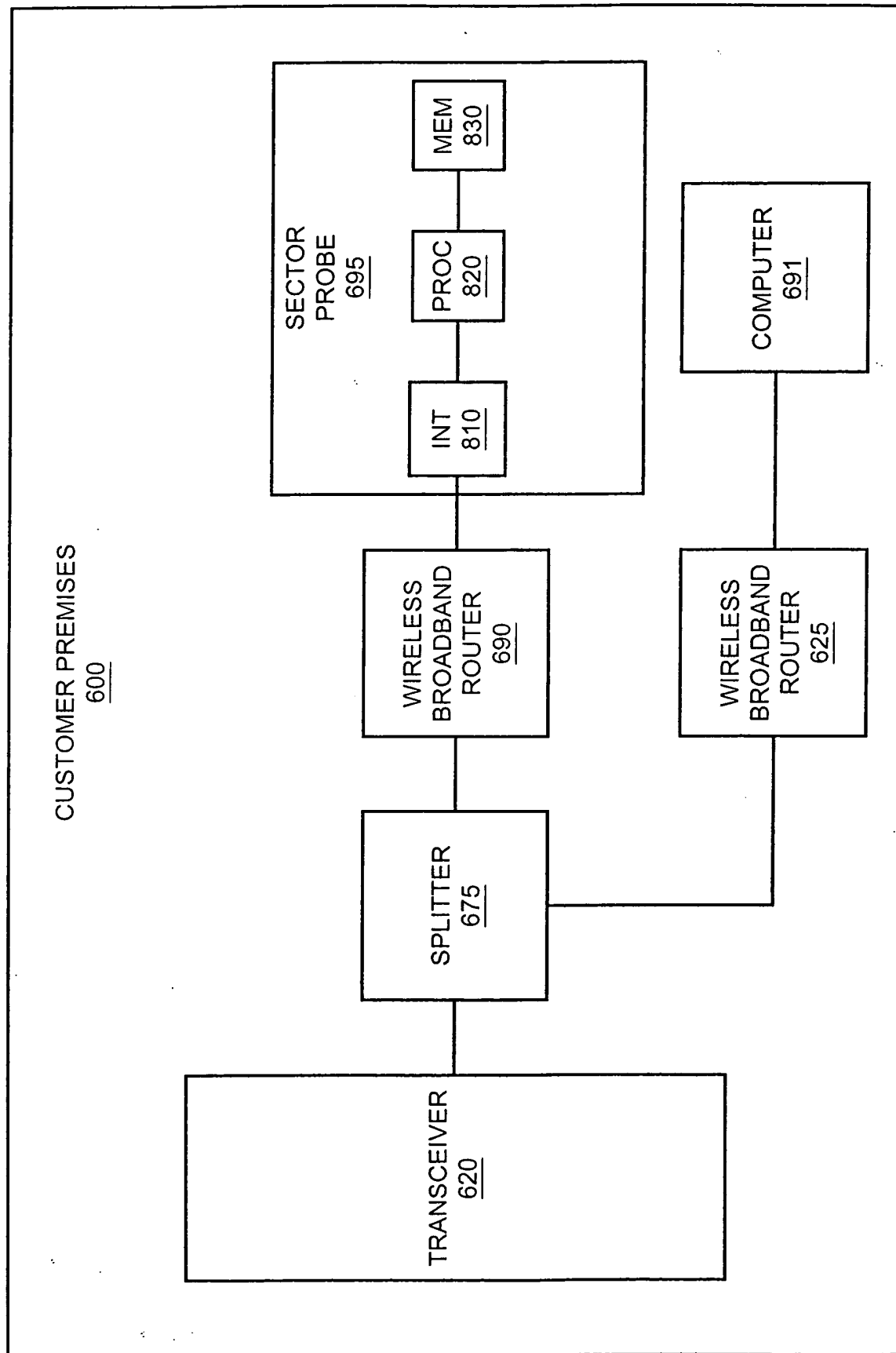


FIG. 8

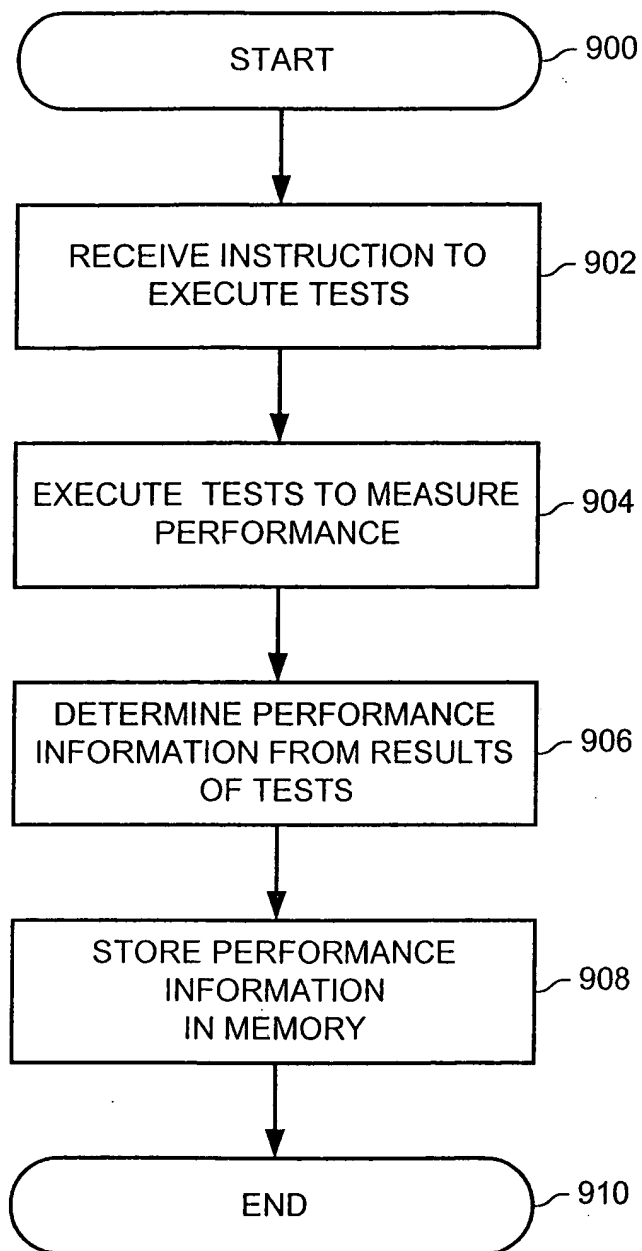


FIG. 9

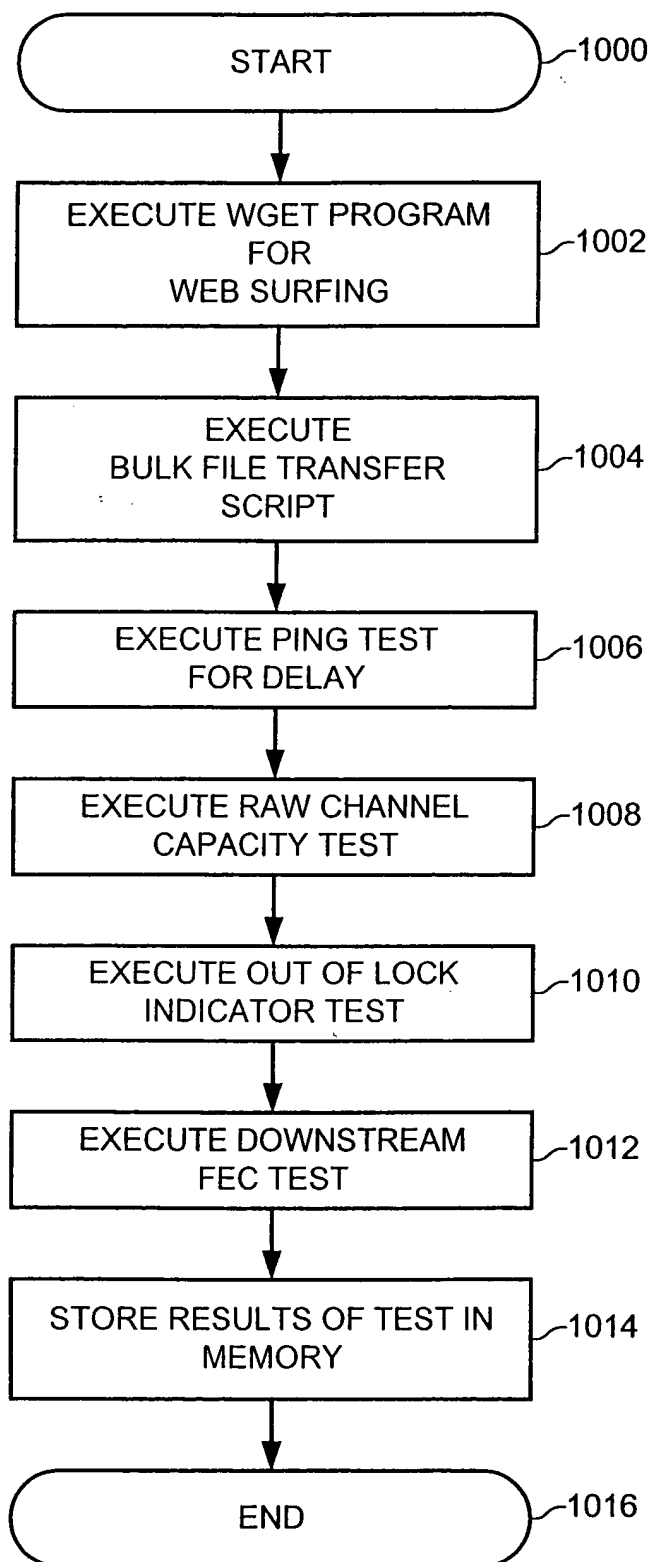


FIG. 10

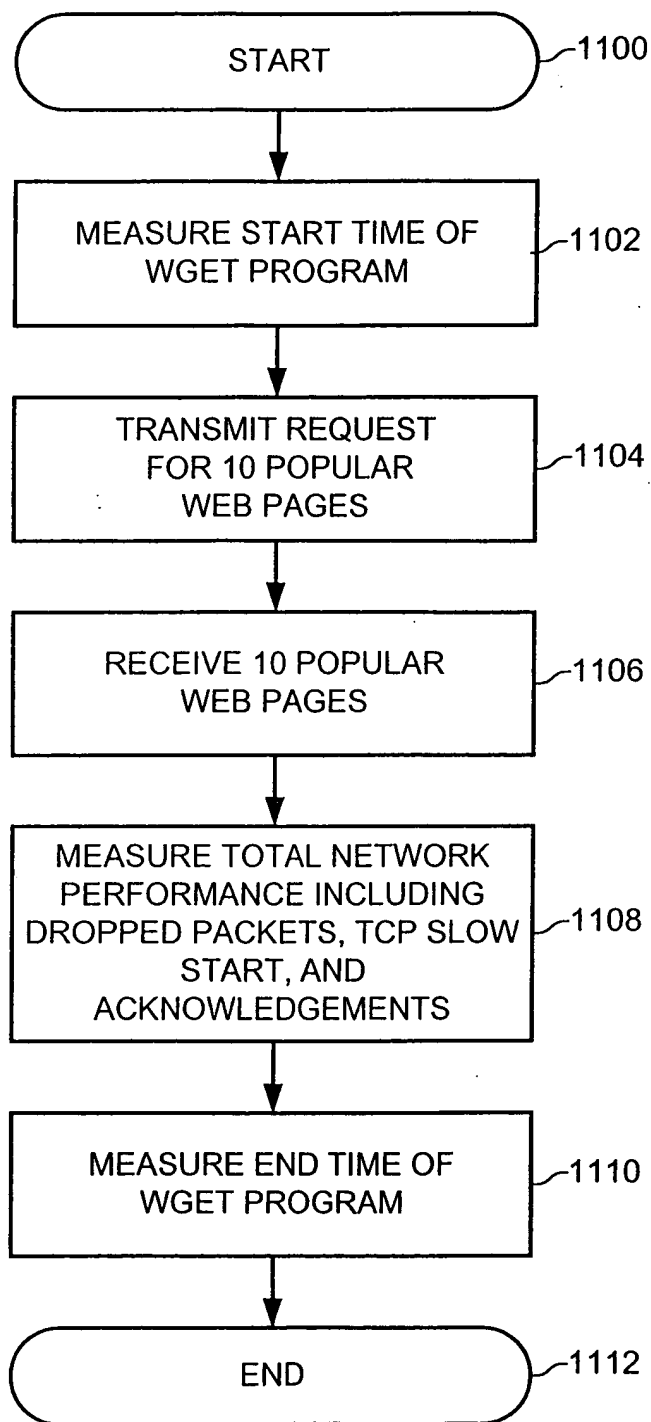


FIG. 11

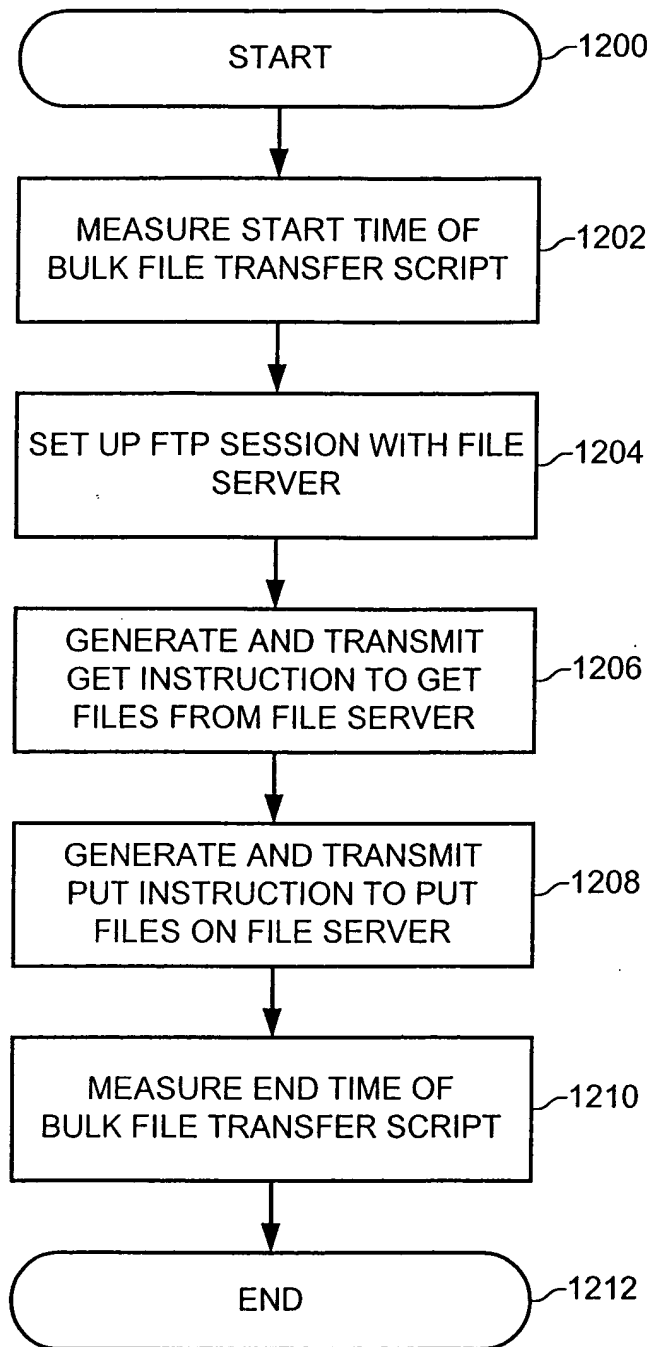


FIG. 12

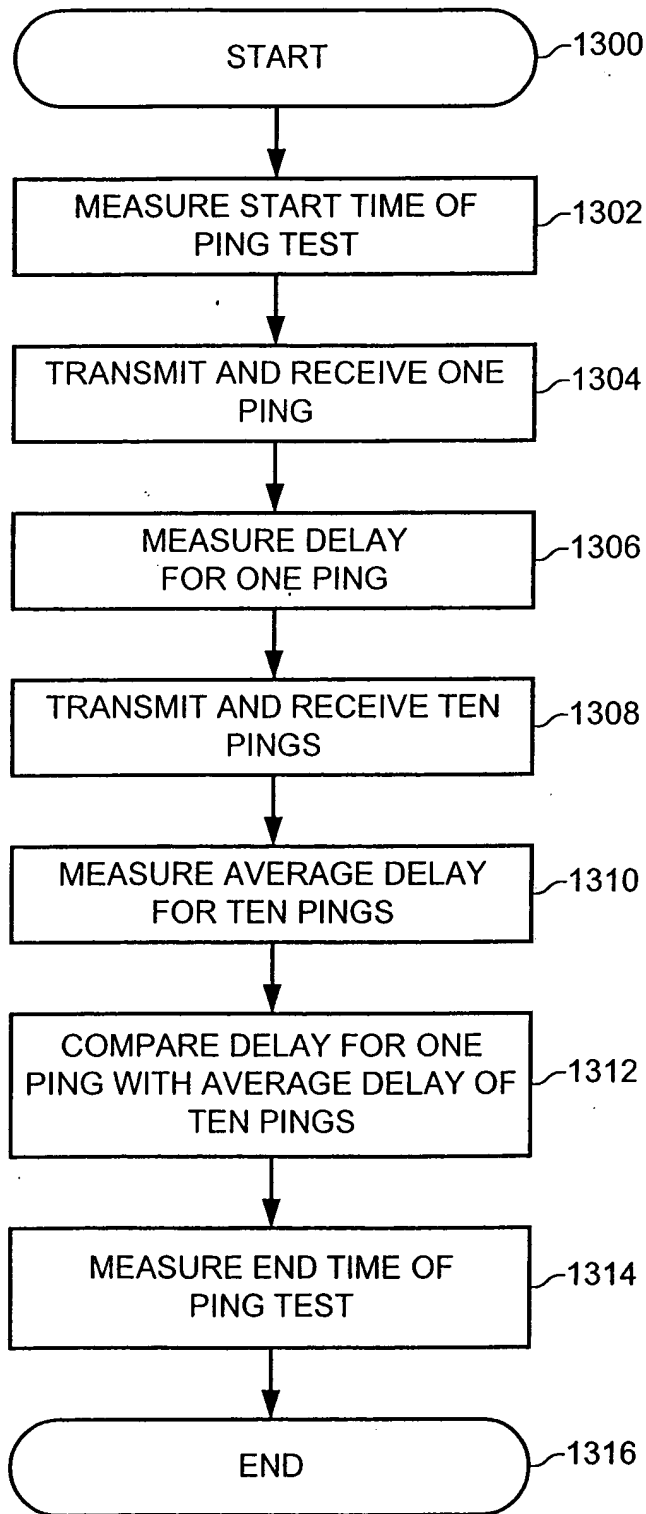


FIG. 13

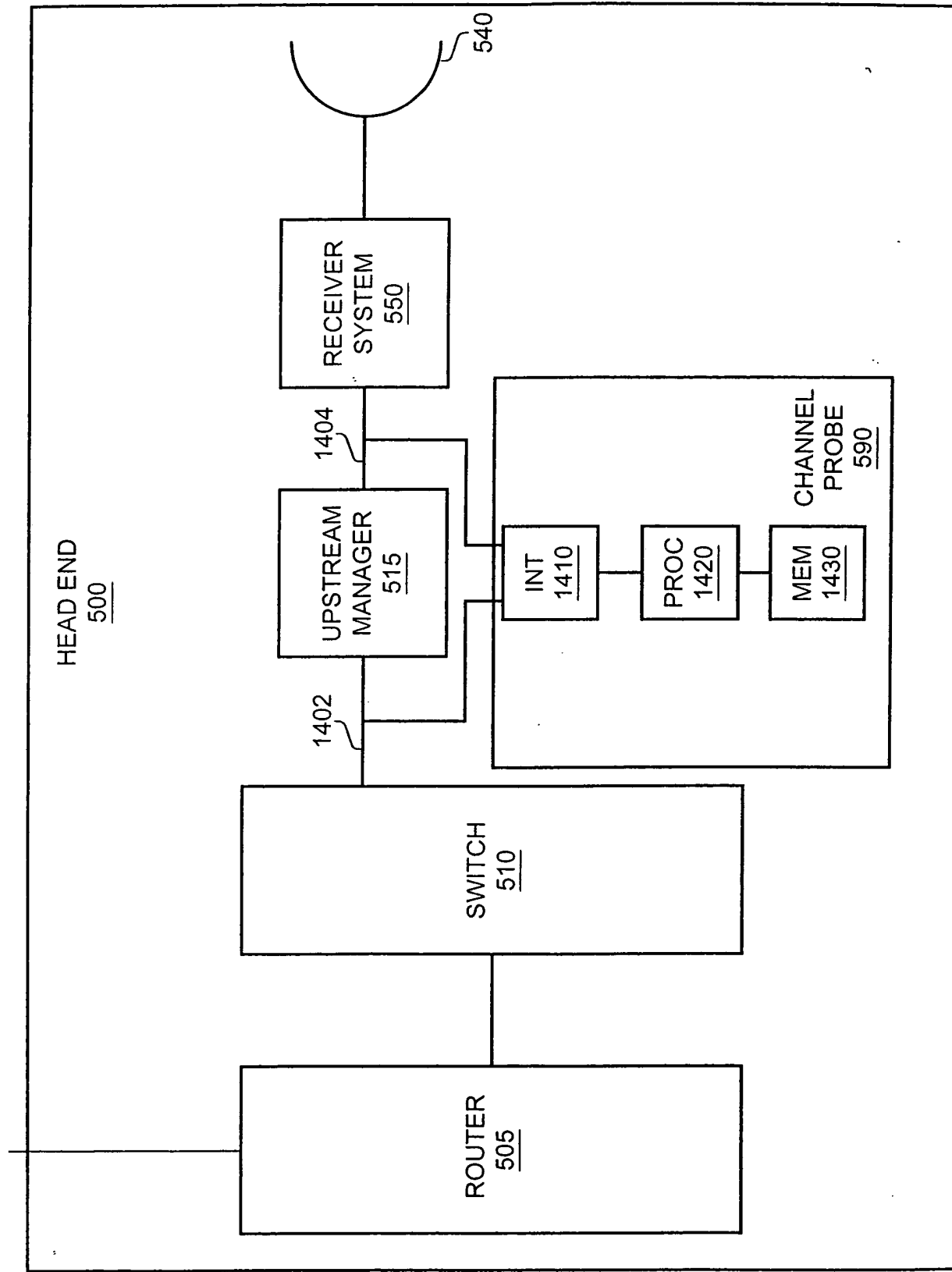


FIG. 14

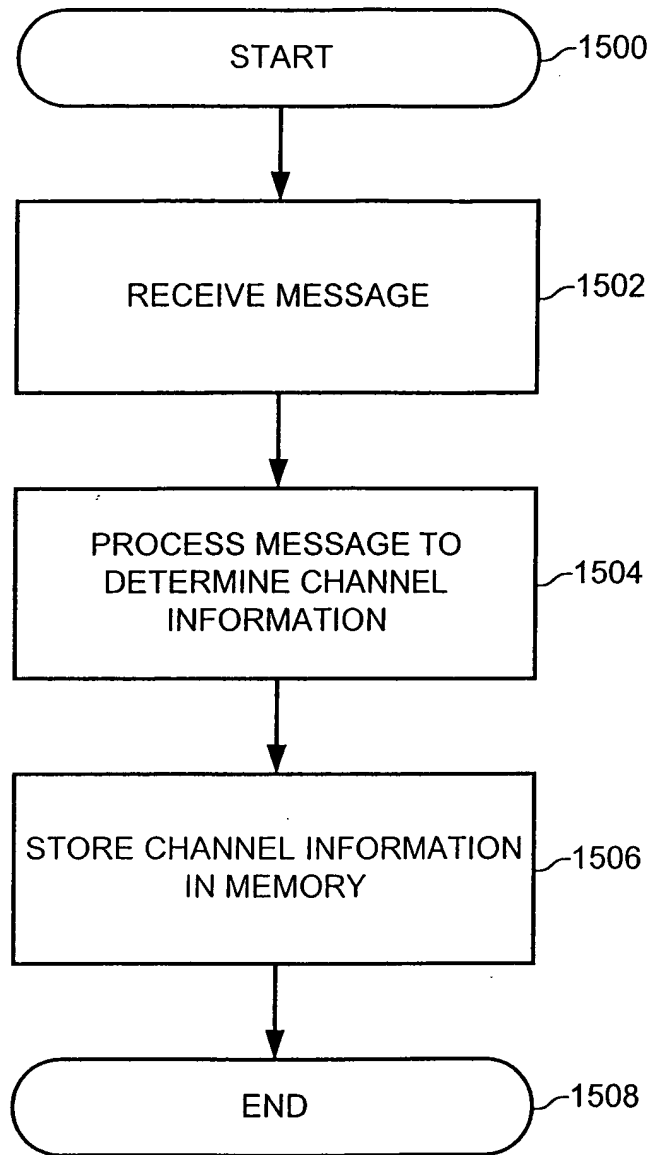


FIG. 15

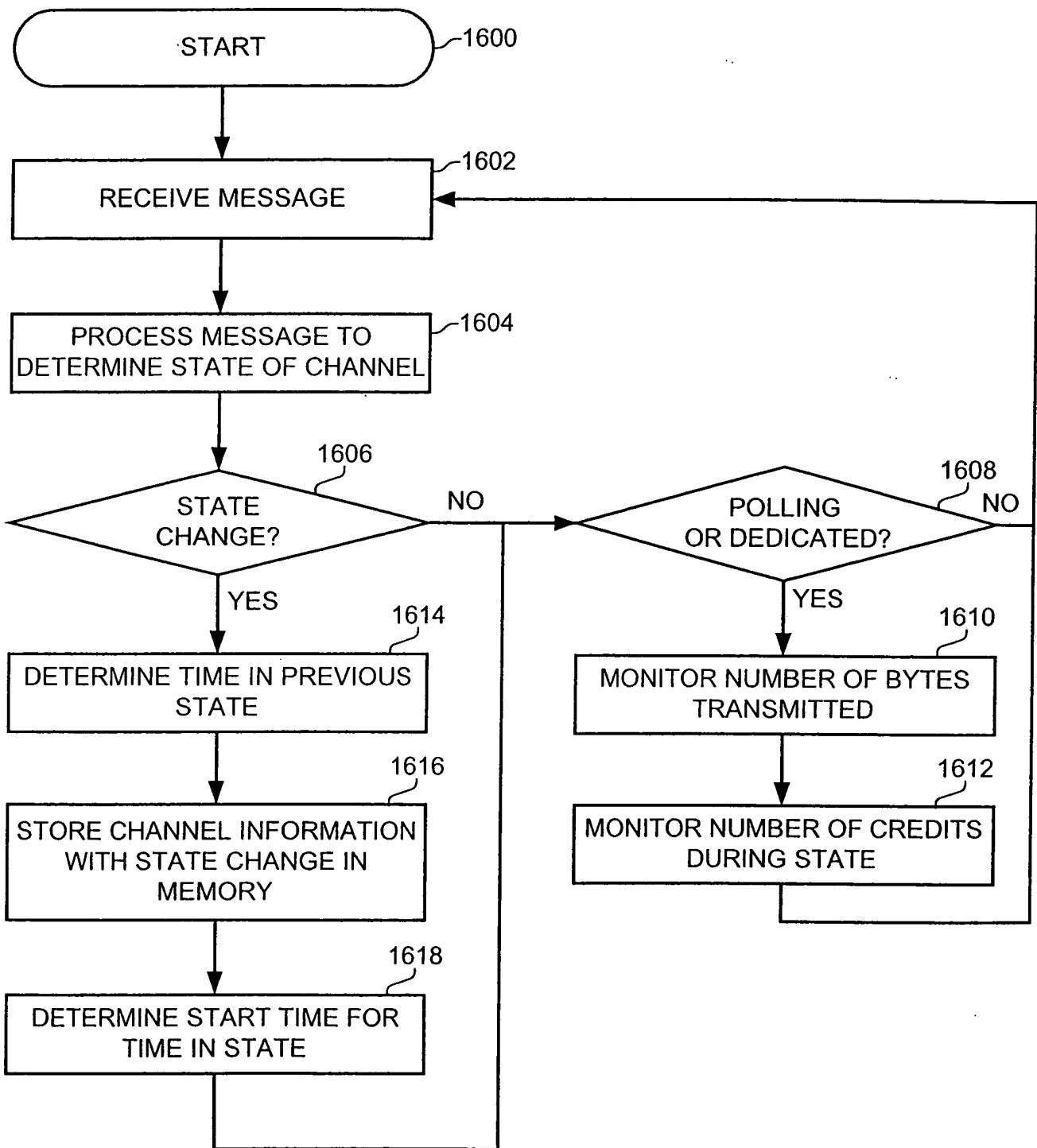


FIG. 16

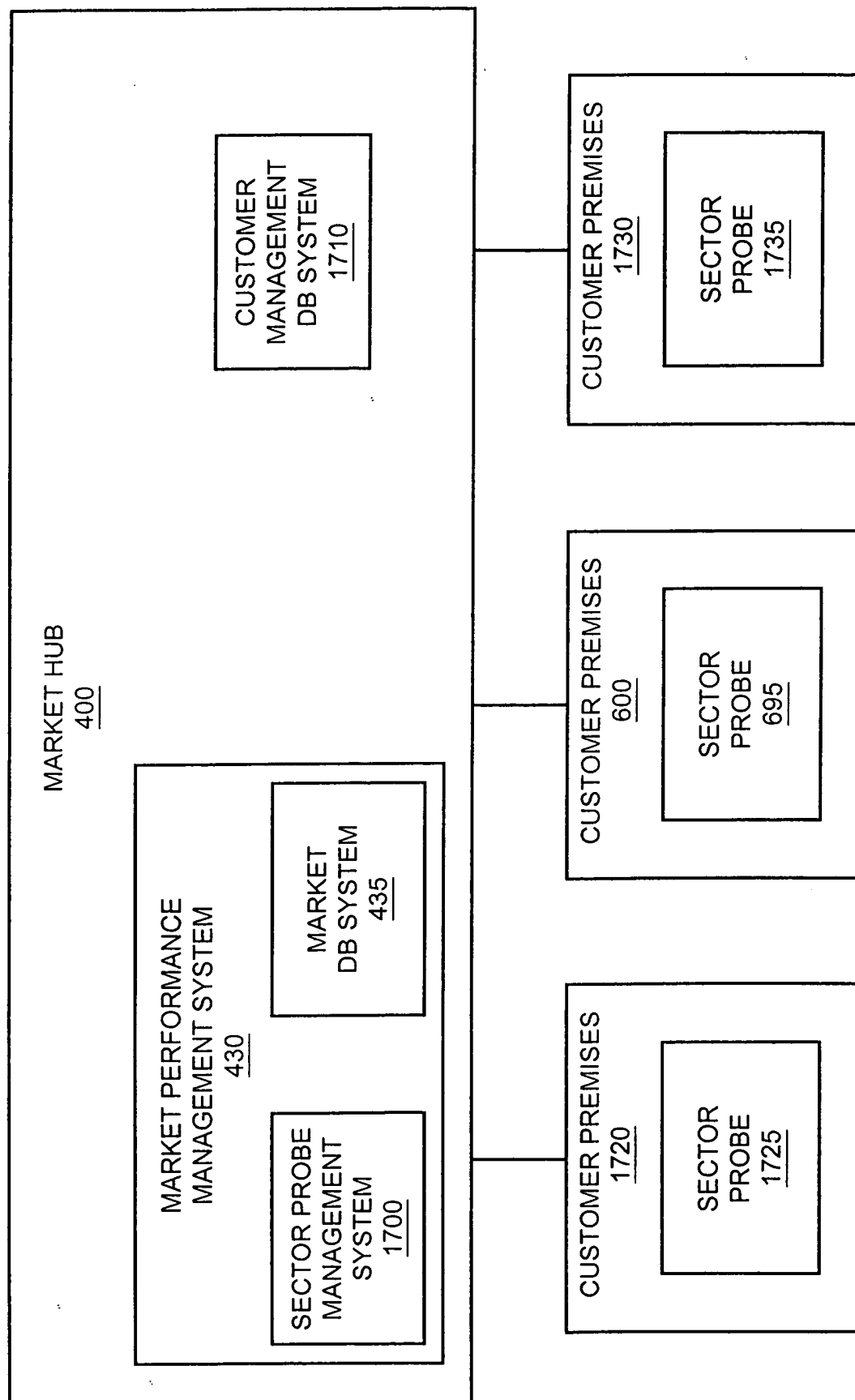


FIG. 17

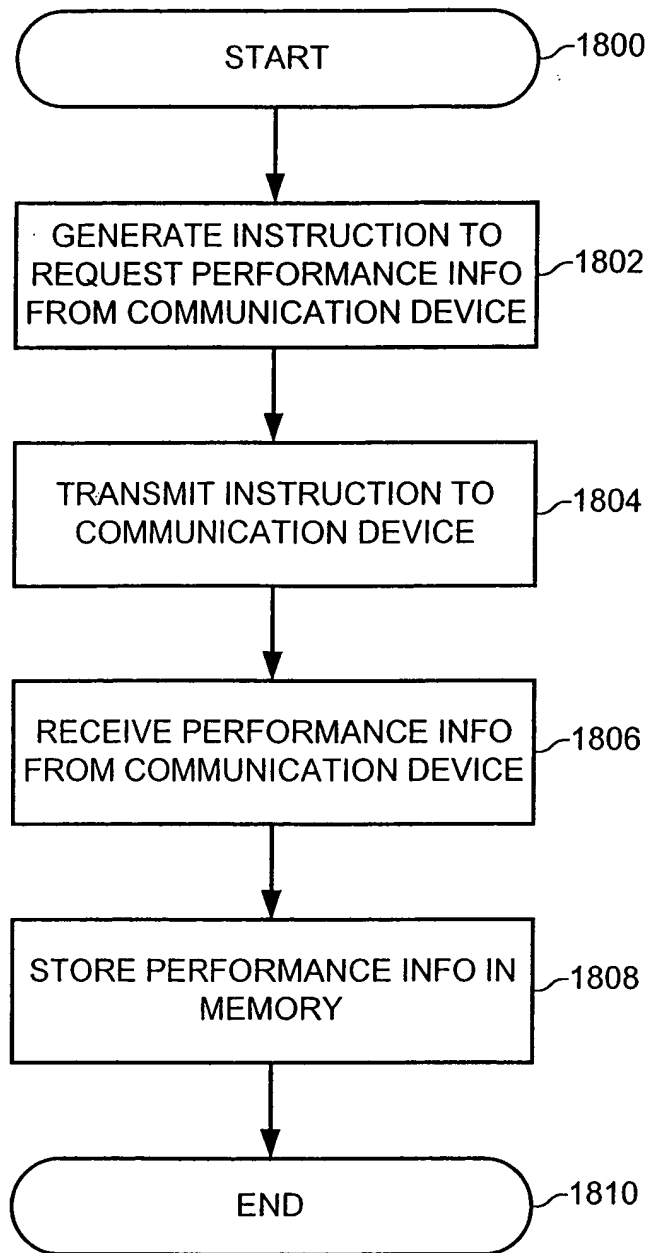


FIG. 18

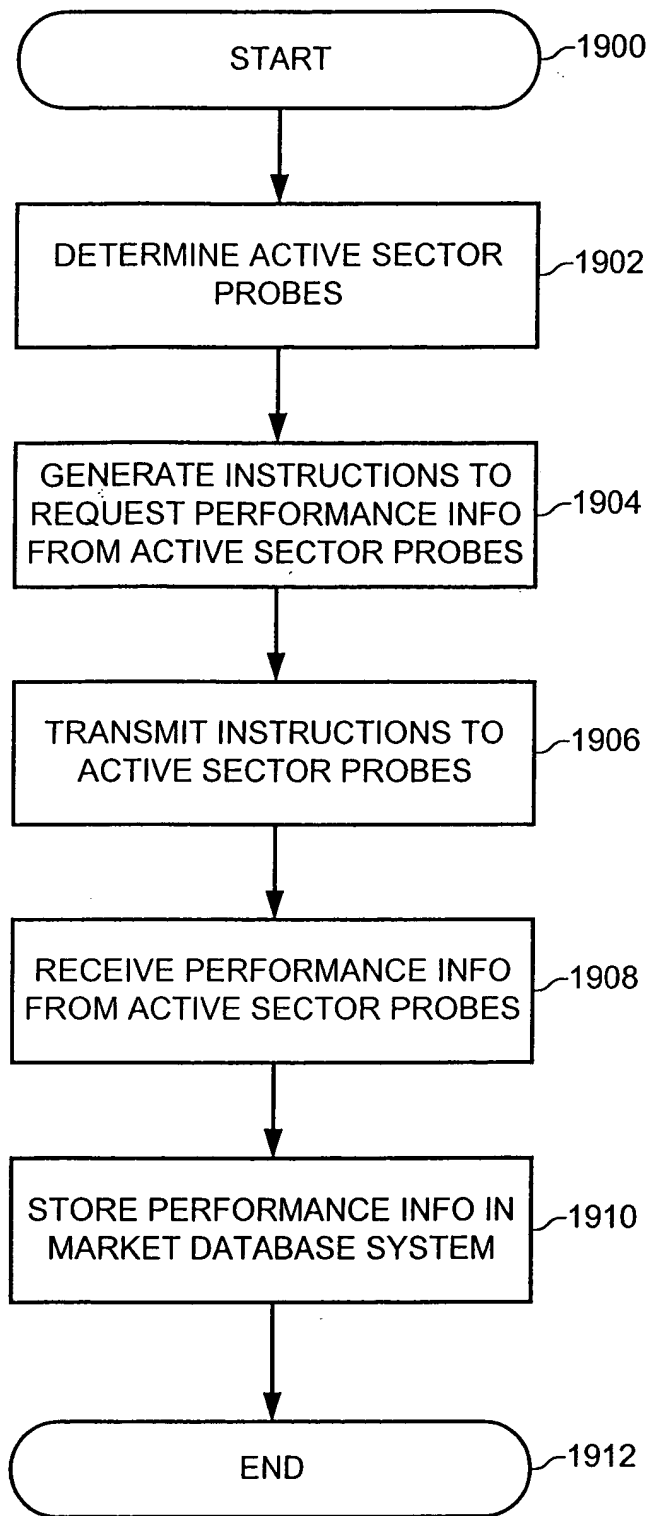


FIG. 19

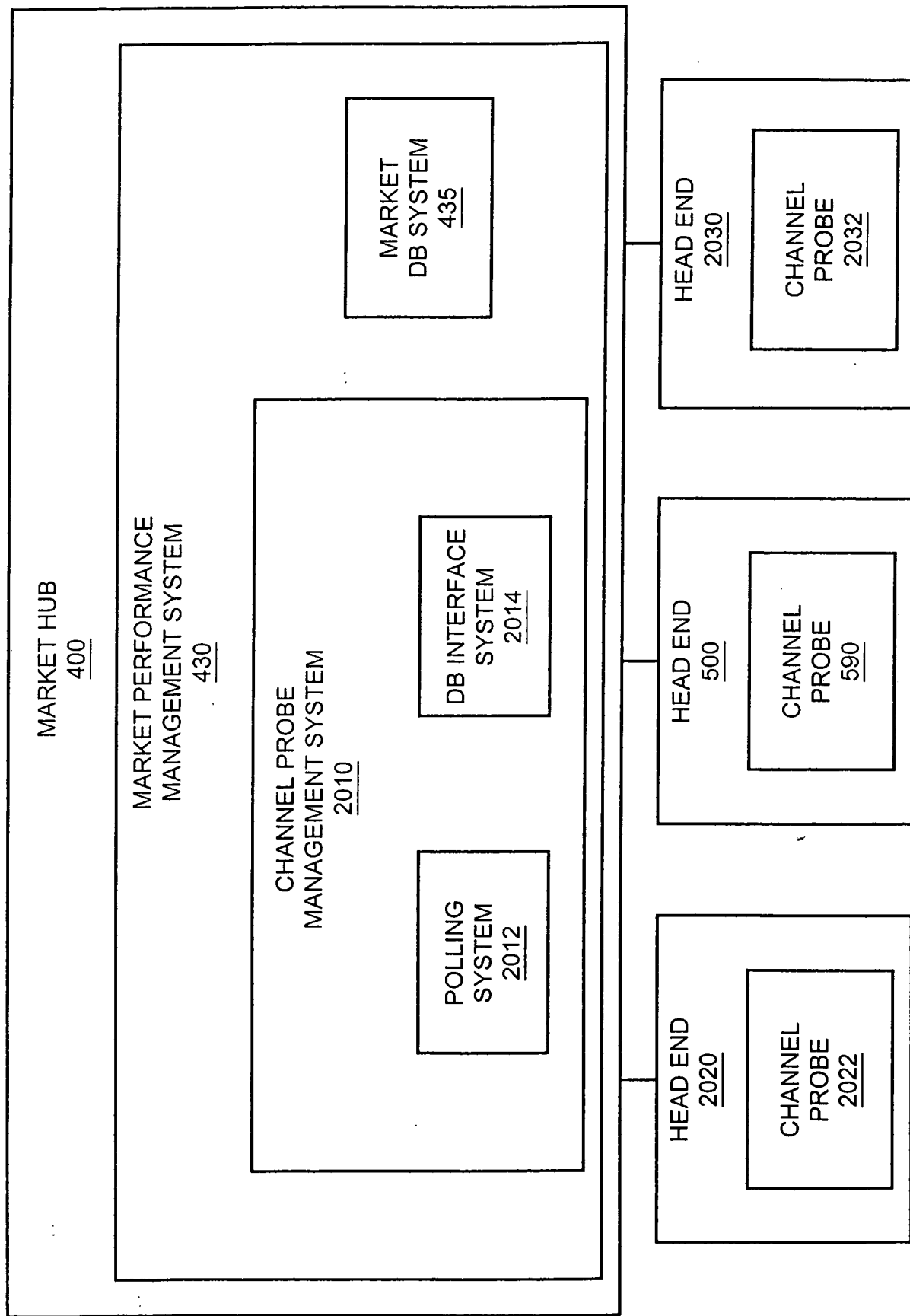


FIG. 20

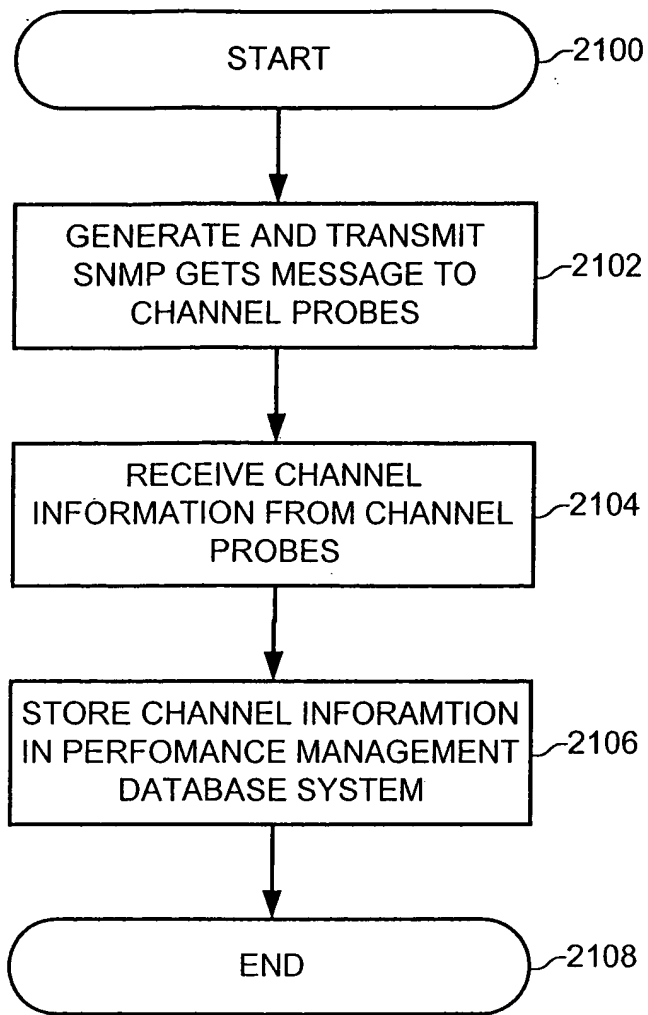


FIG. 21

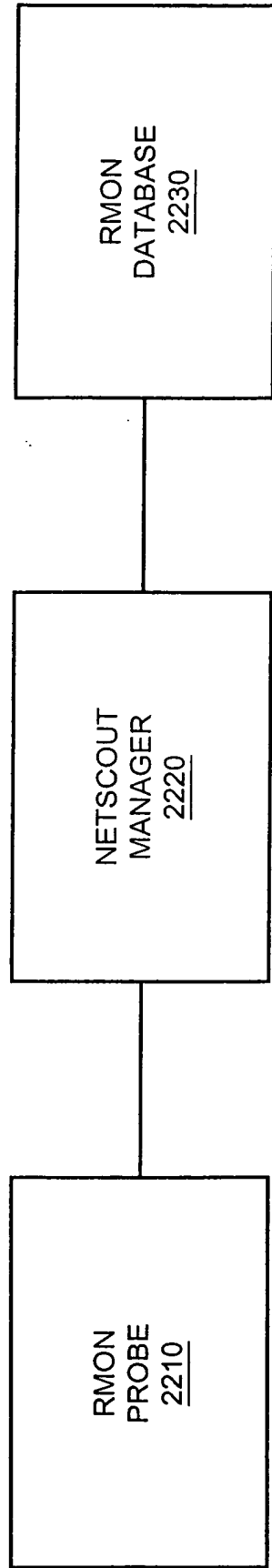


FIG. 22
PRIOR ART

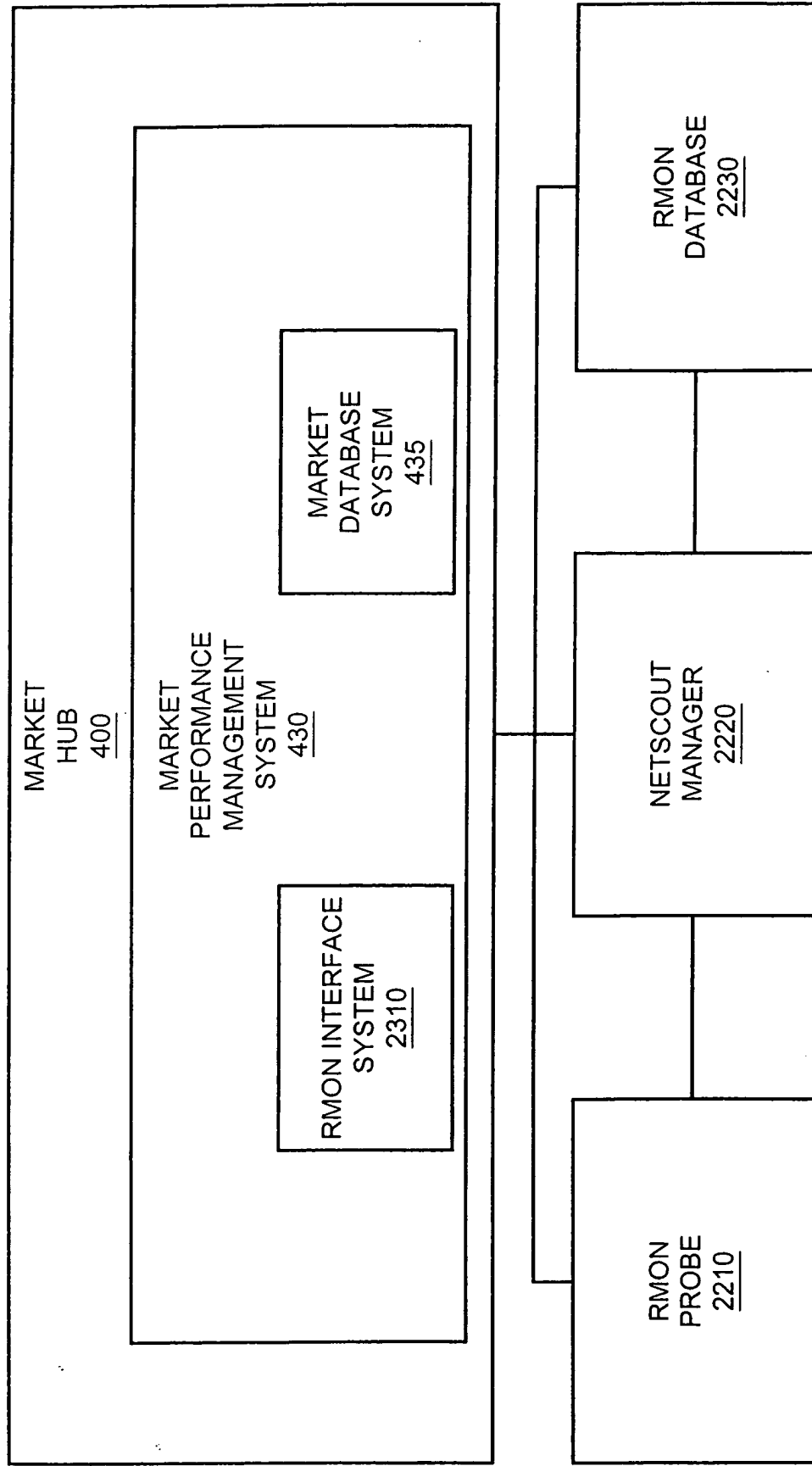


FIG. 23

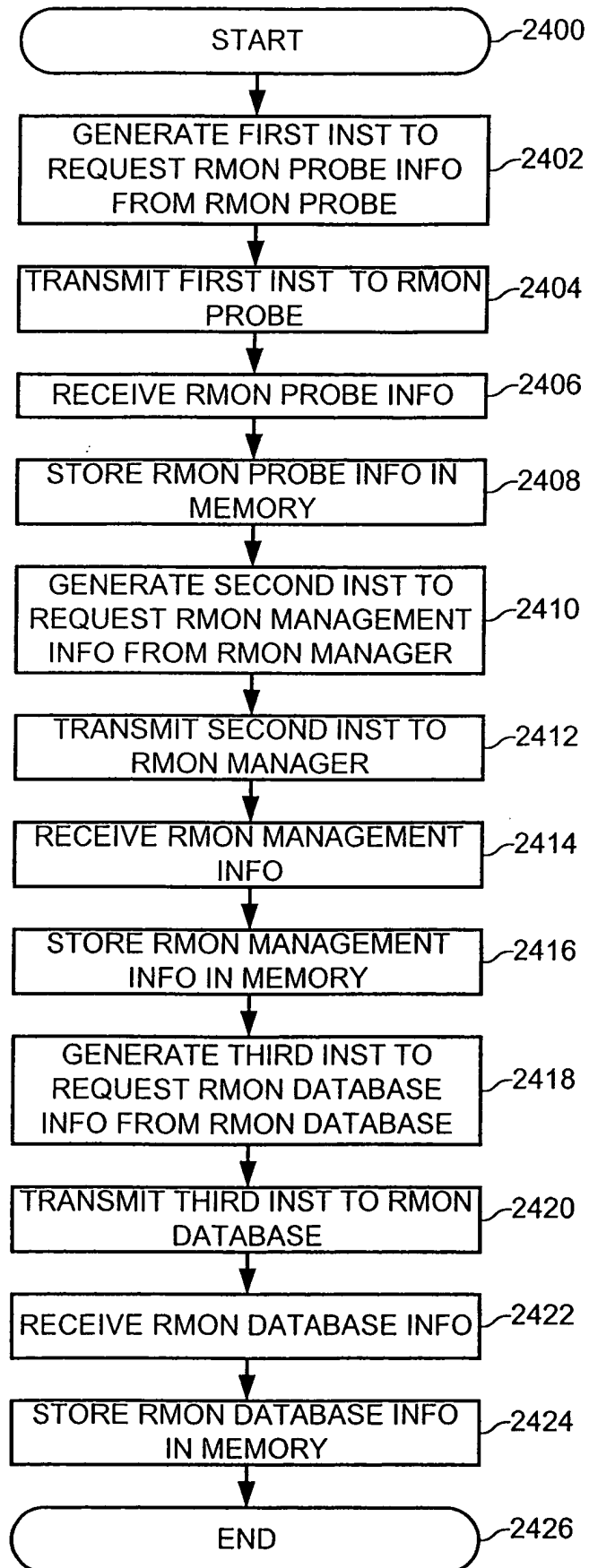


FIG. 24

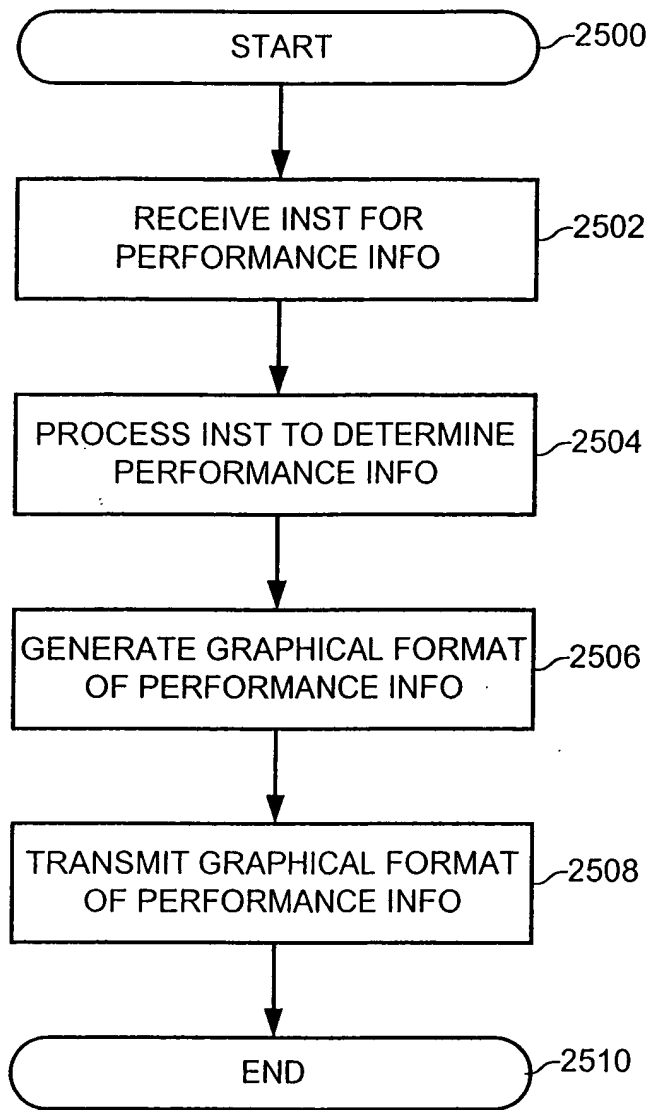
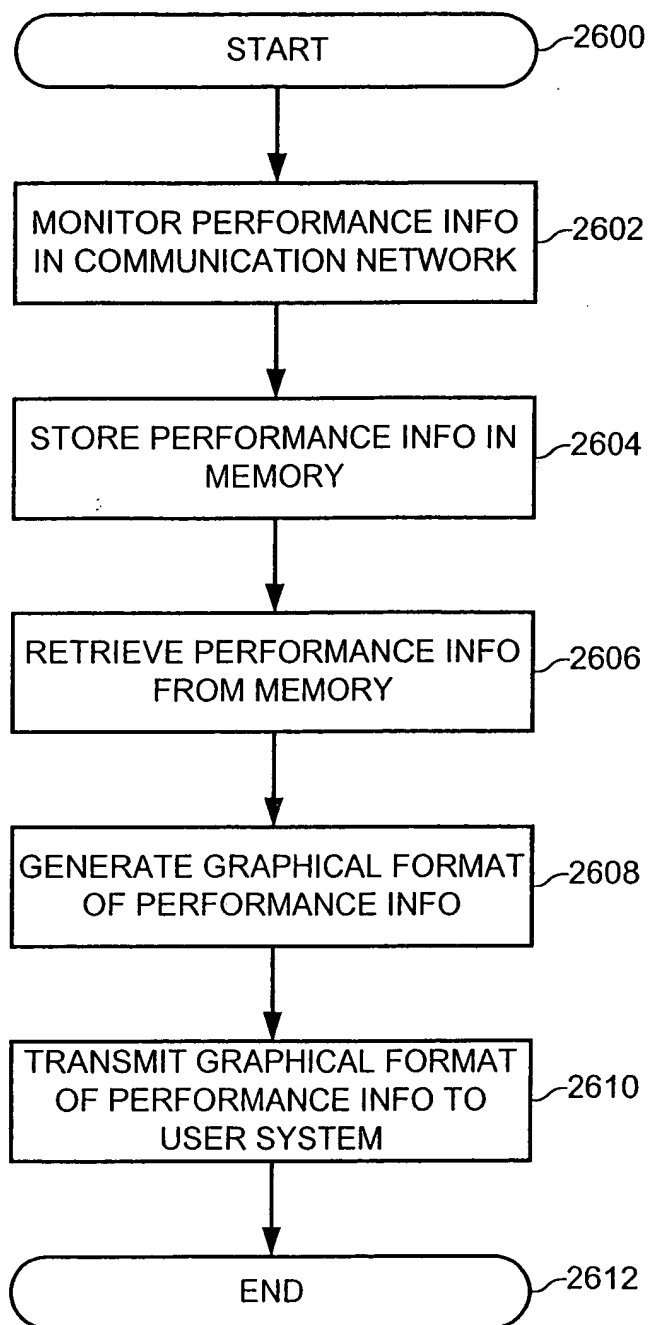


FIG. 25

**FIG. 26**

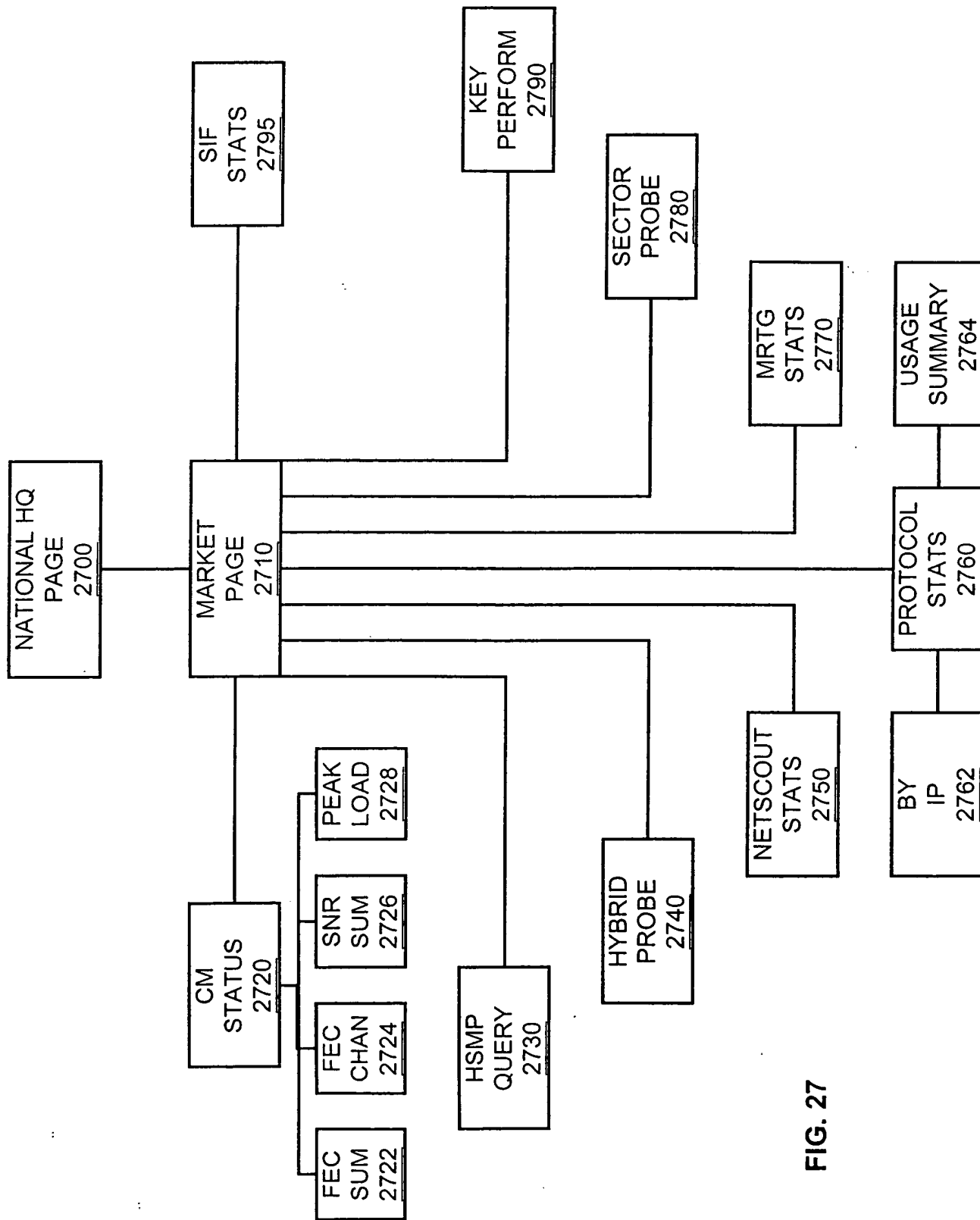


FIG. 27

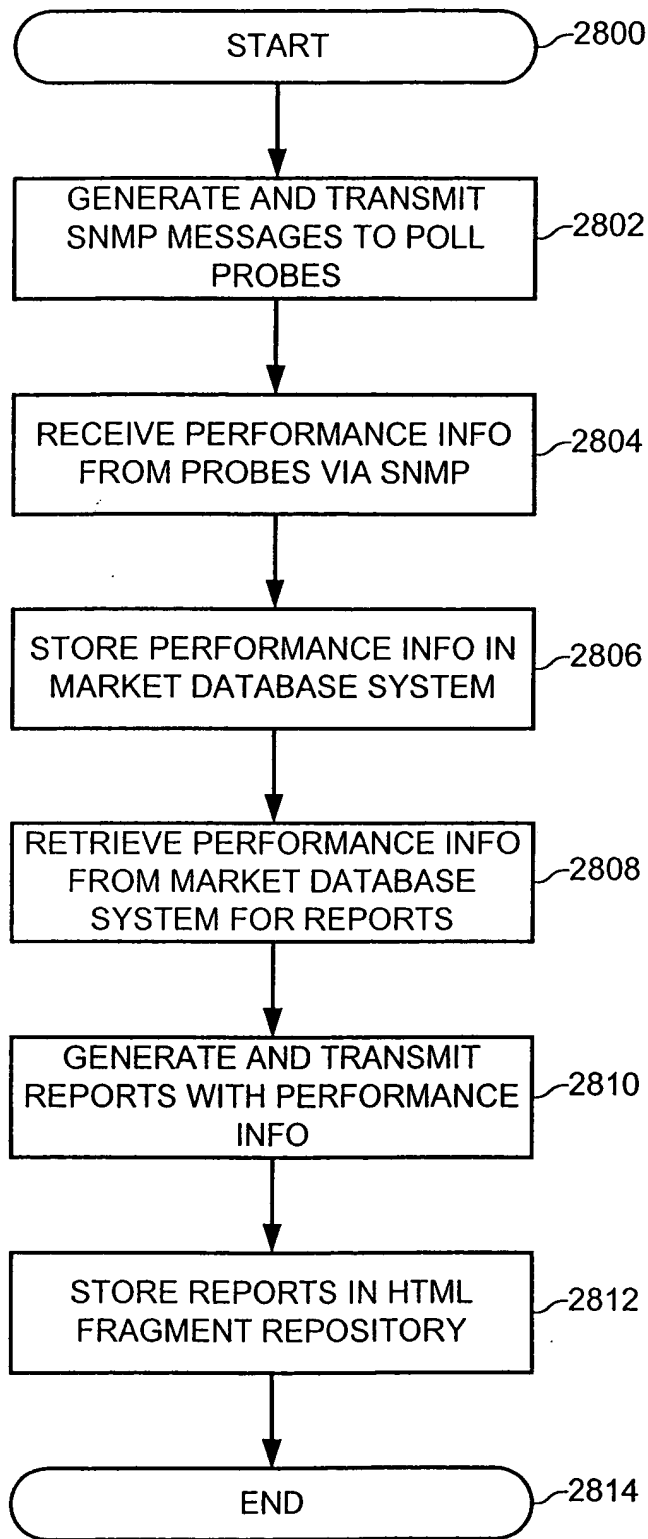


FIG. 28

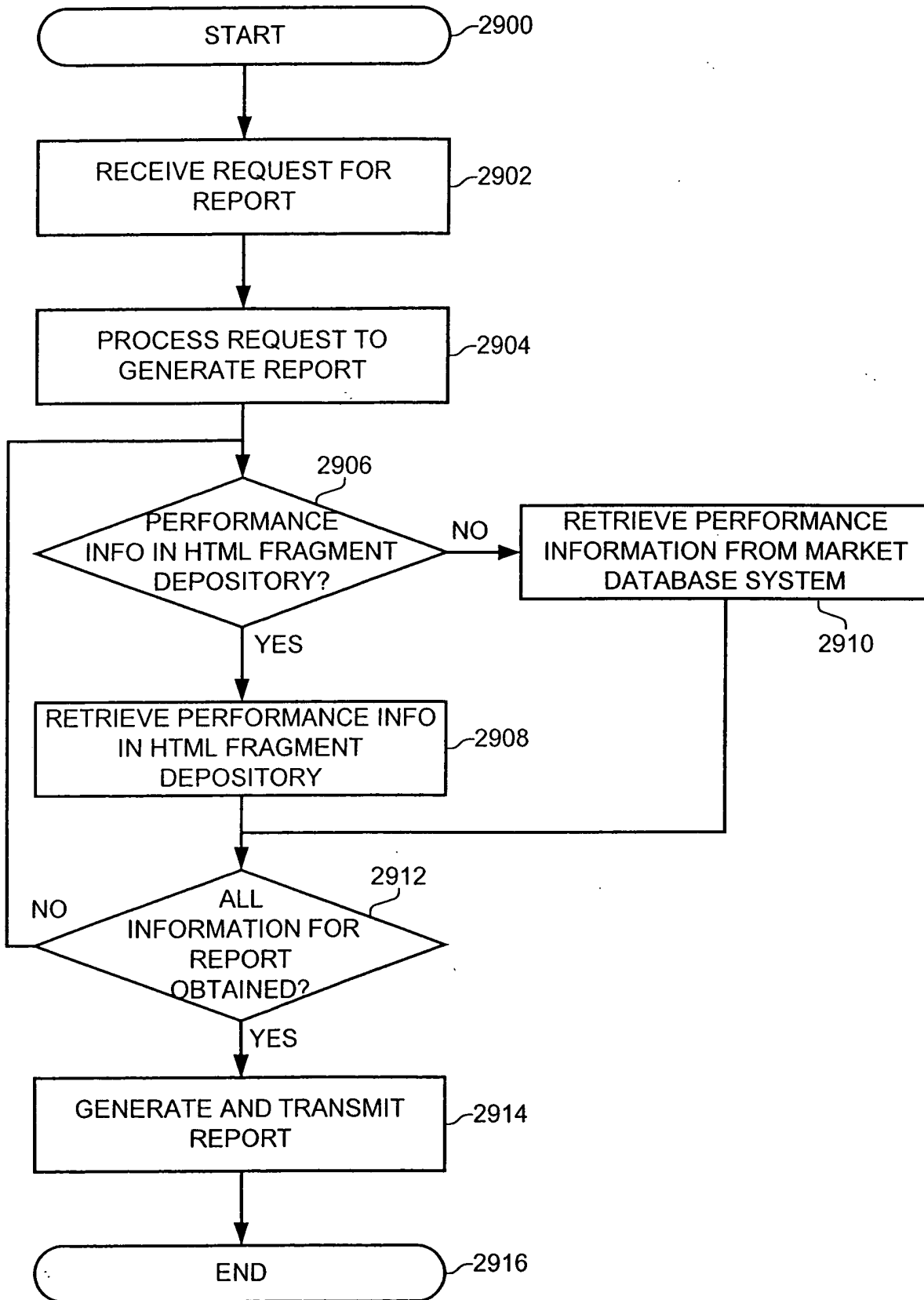


FIG. 29

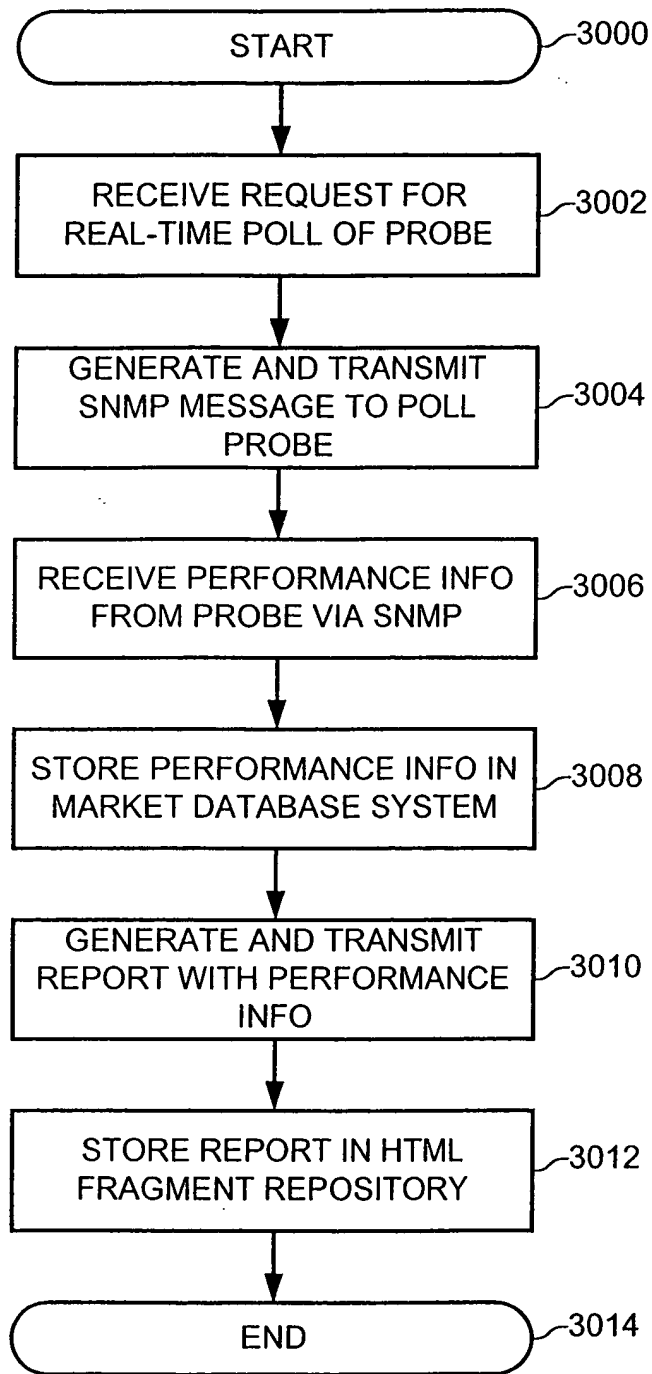


FIG. 30

FOUO "SF013650"

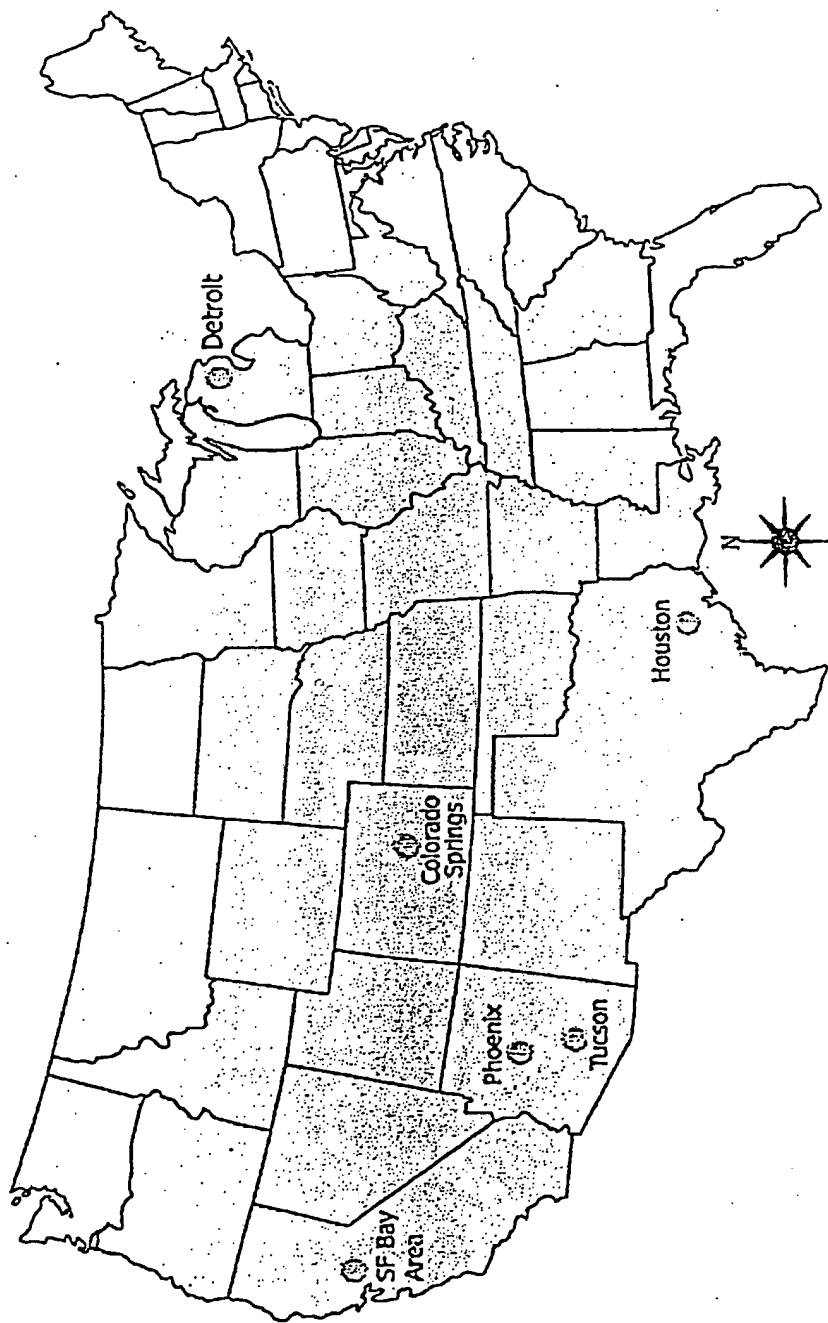


FIG. 31

Performance Management System

VERTEX

CmsStatus

HSMP Gateway

Hybrid Probe

NetScout Statistics

Protocol Statistics

MRTG Statistics

Sector Probe

Key Performance Indicators

SIF Statistics



Top

Phoenix Network Health Monitor Interface



Visibility into the network is a primary concern of the Vortex team. It is the job of the network management architecture to enable this visibility. Without it, the network cannot be effectively run; faults cannot be located and corrected, capacity planning cannot be done, and progressive problems cannot be found and stopped from reaching a critical stage until it is too late.

The architecture is generally divided up into three parts:

Collectors (also known as "probes"), data warehouses, and reporting tools. Collectors include devices such as the NetScout RMON probe and two in-house engineered probes, the Hybrid Probe and the Sector Probe. Data warehouses consist of Oracle databases residing on Market and National Vertex Servers. These databases run on Sun Microsystems UNIX workstations that have RAID mass storage systems built in. The reporting tools are primarily the web-based tools hosted by the Market VERTEX Servers.

Follow the links along the left-hand side of the page to gain access to VERTEX reports.

Until a permanent home is picked, hasd size graphs can be found [here](#).

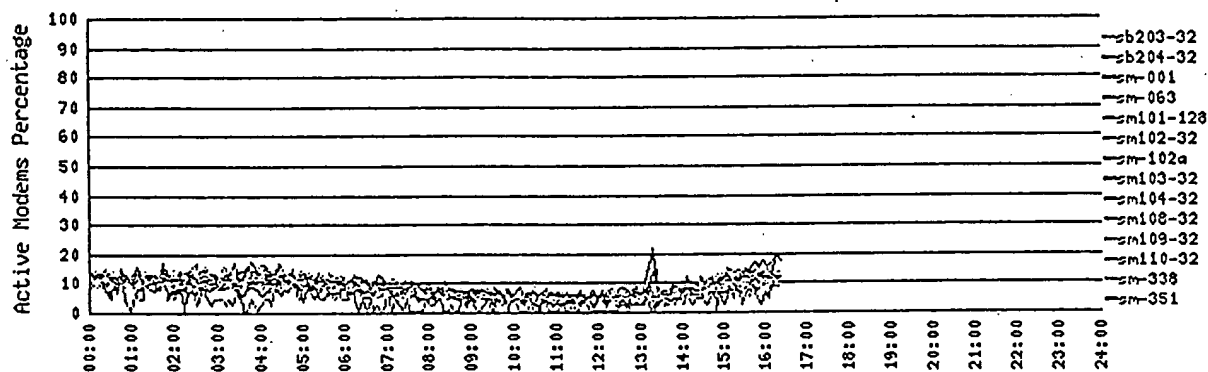
FIG. 32

User/Channel Distribution by Sector

Enter Query Date in YYYYMMDD format:

Active Modem Percentage: modem counts in polling, contention, and dedicated over total WBRs.

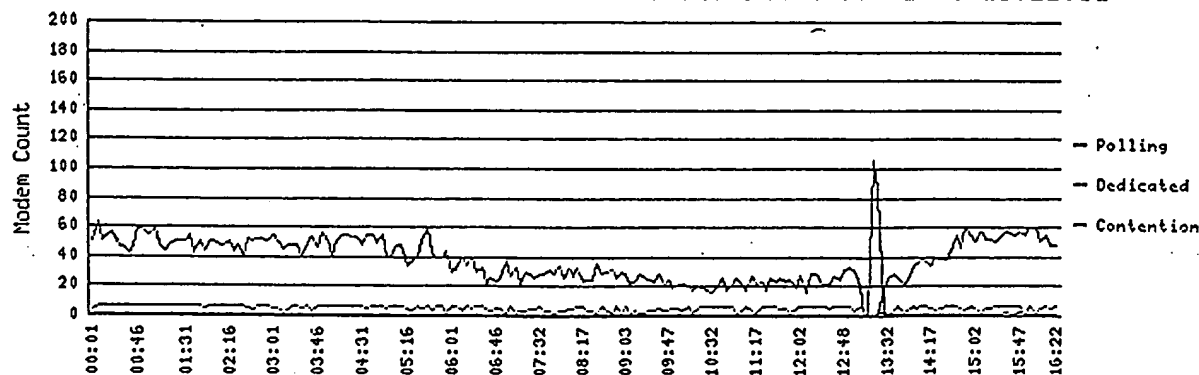
All sectors between 2000-12-15 00:01:20 and 2000-12-15 16:22:41 GMT



Sector sb203-32 on hm01.phoenix.speedchoice.com

Click on the summary for detailed graphs.

Sector sb203-32 between 2000-12-15 00:01:20 and 2000-12-15 16:22:31

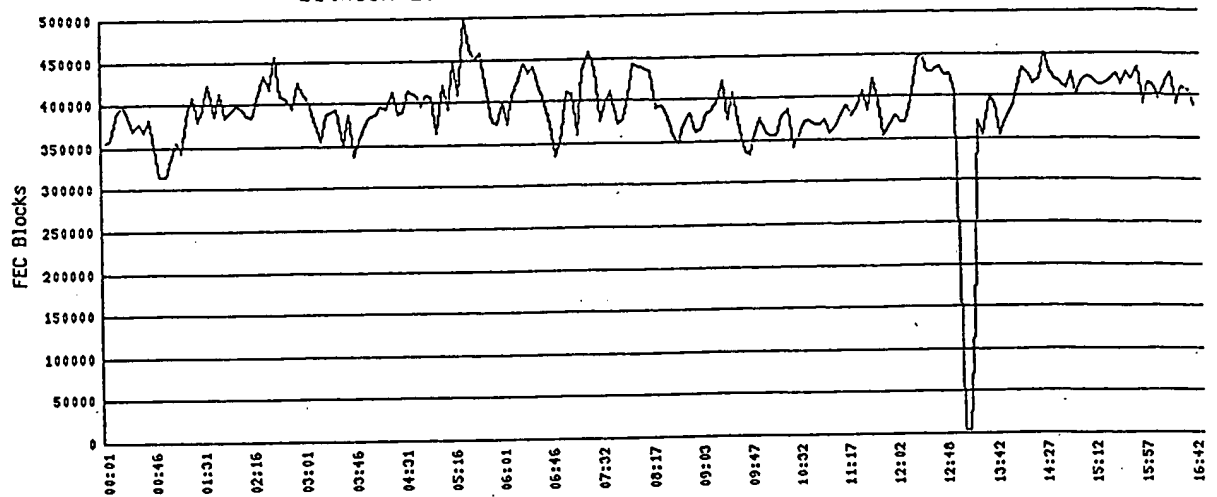


[\[FEC Summary\]](#) [\[FEC Channel\]](#) [\[SNR Summary\]](#) [\[Peak Load/Capacity: 103 %\]](#)

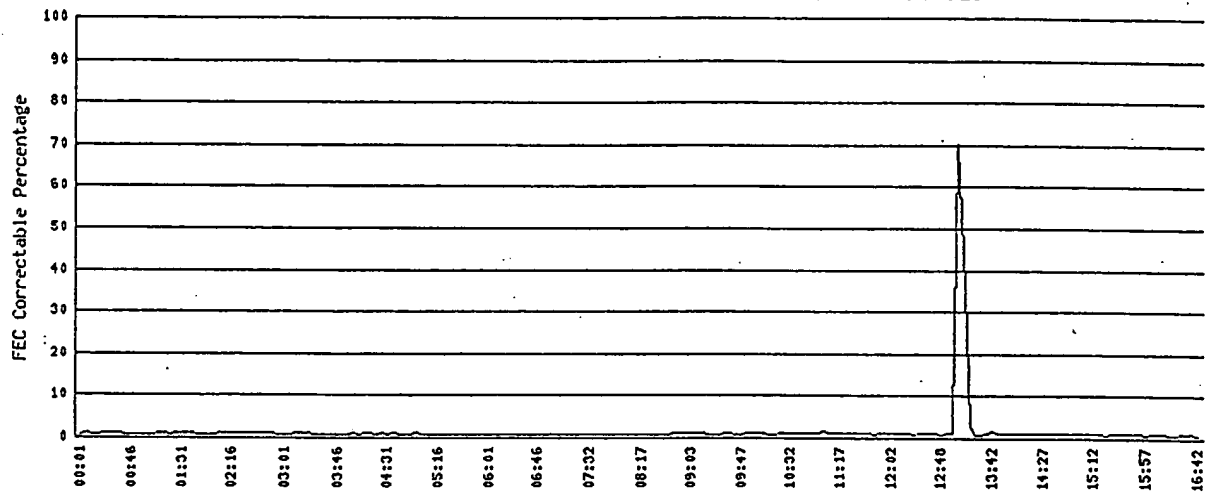
FIG. 33

FEC Summary Graph for sb203-32

Between 2000-12-15 00:01:20 and 2000-12-15 16:42:19



Between 2000-12-15 00:01:20 and 2000-12-15 16:42:19



Between 2000-12-29 00:00:22 and 2000-12-29 15:40:33

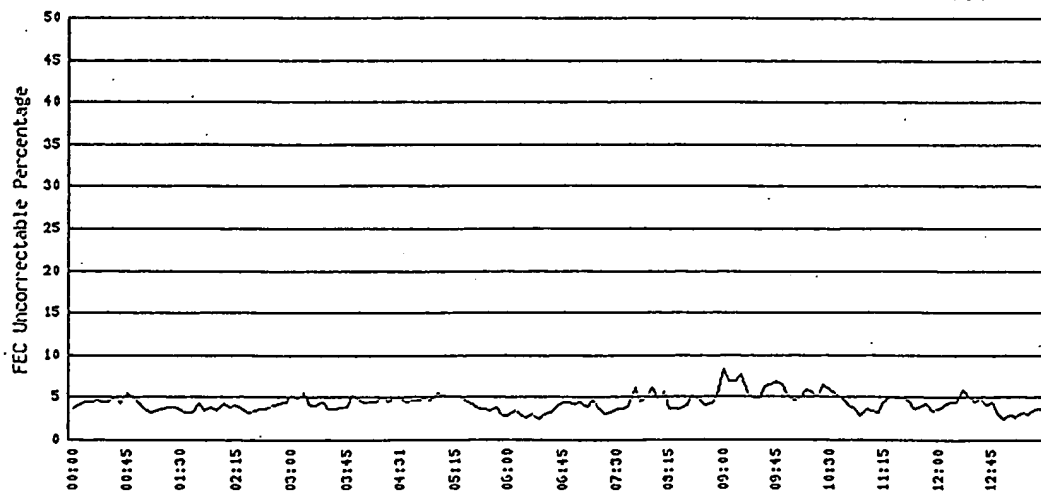


FIG. 34

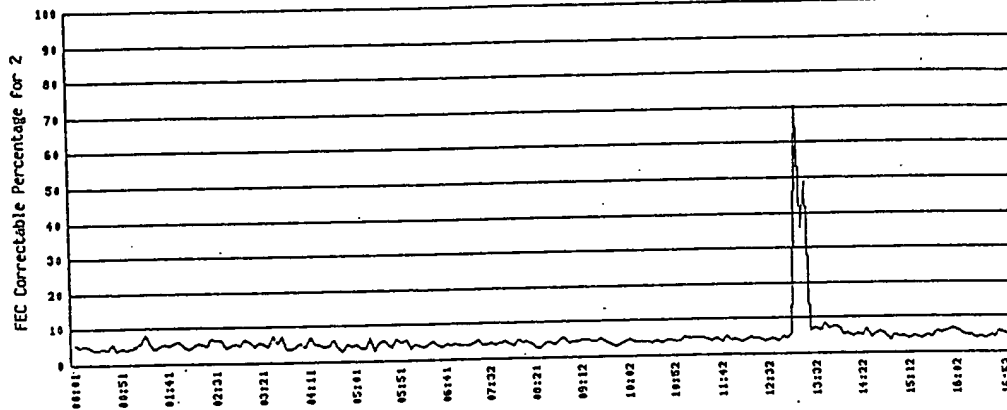
FIG. 34 "SB203-32"

Channel detail graph for sb203-32 channel 2

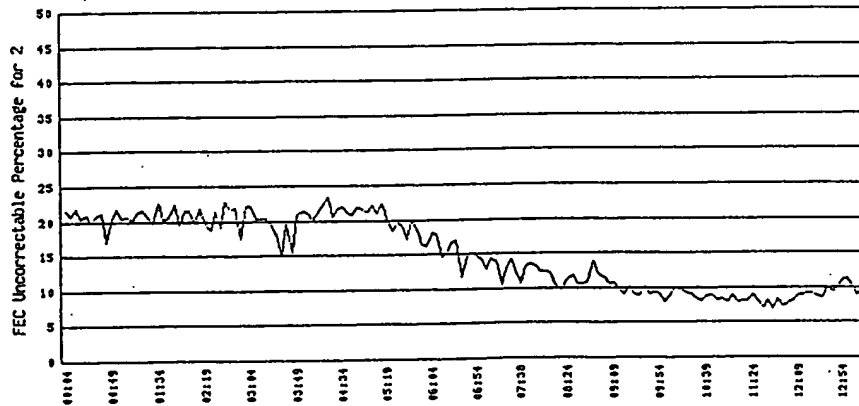
Between 2000-12-15 00:01:20 and 2000-12-15 16:57:19



Between 2000-12-15 00:01:20 and 2000-12-15 16:57:19



Between 2000-12-29 00:04:11 and 2000-12-29 15:49:18



Between 2000-12-29 00:04:11 and 2000-12-29 15:49:18

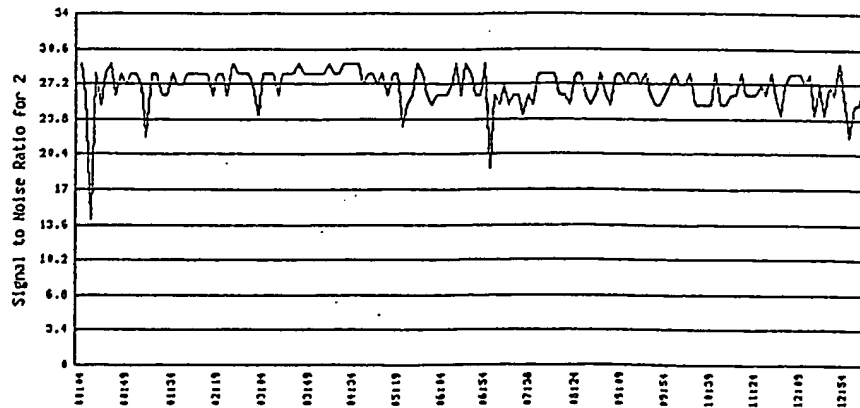


FIG. 35

FIG. 35 "STATION"

Signal to Noise graph for sb203-32

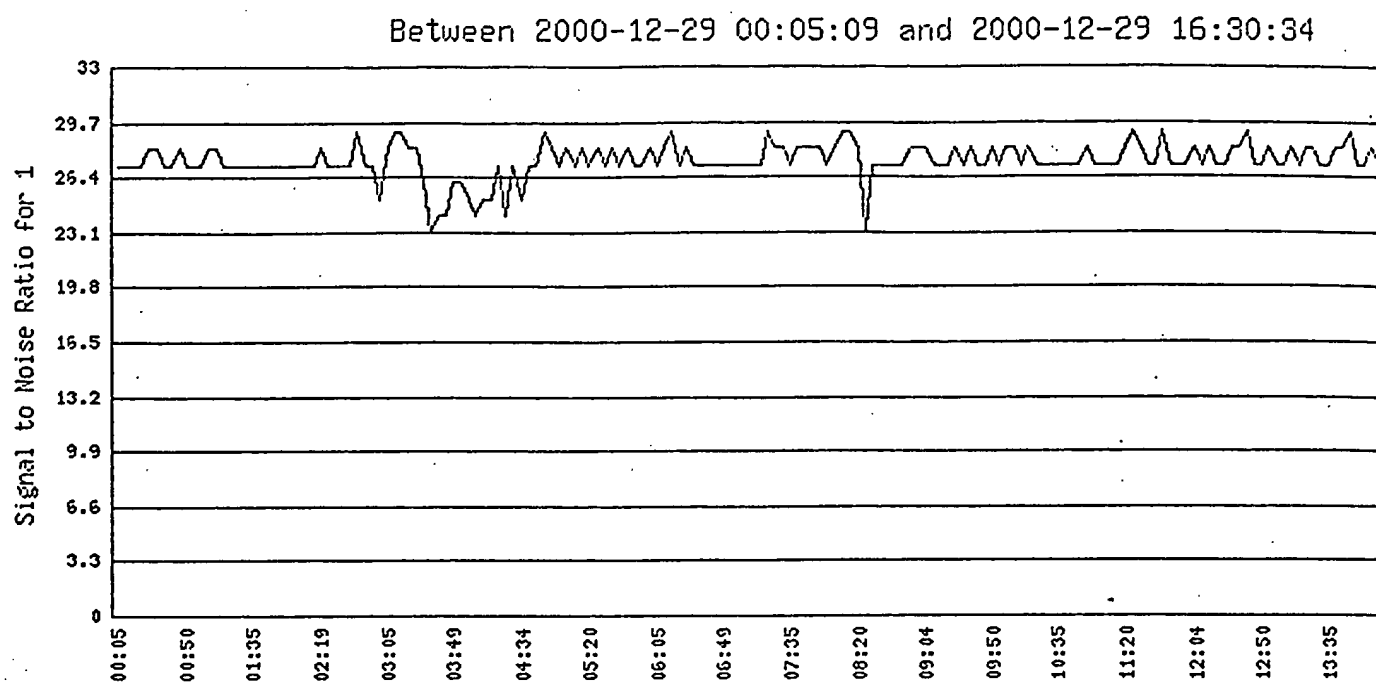


FIG. 36

Load and Capacity

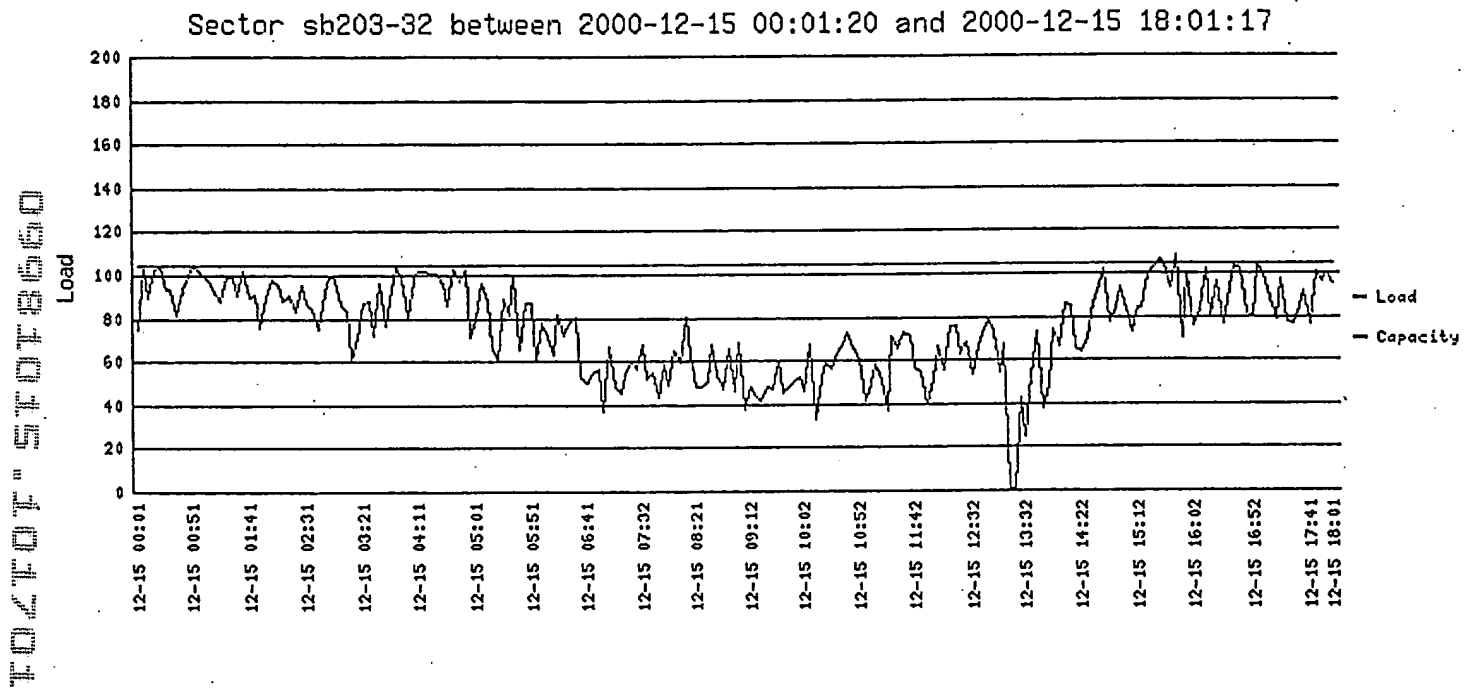


FIG. 37

Remote HSMP Query Form

Access Level	BWG Engineer
IP Address e.g, 24.221.13.83	<input type="text"/> <i>Note: Enter an IP address -OR- a User ID; not both</i>
User ID e.g, 149219	<input type="text"/> <i>Note: This corresponds to the UUID field in the database</i>
Query Type	<p><input checked="" type="radio"/> Standard queries:</p> <div><p>hybs</p><p>qpsk tstat</p><p>qpsk stat</p><p>qpsk gdump</p><p>qams</p><p>hostname</p><p>hybs so0</p><p>hybs so1</p></div> <p>(Hold down the 'CTRL' key to select multiple queries)</p> <p><input type="radio"/> Custom query: <input type="text"/></p> <p><i>Note: Only administrators can perform custom queries</i></p>
<p><input type="button" value="Submit Request(s)"/></p> <p>Warning: This could take up to 30 seconds per query; please be patient</p>	

FIG. 38

Hybrid Probe - Phoenix

Start date: 12-19-00 Start time: 00:00:00
End date: 12-19-00 End time: 18:22:19

Number of entries: 10

CSV Format ☐

Get Results

Start time: 12-19-00 00:00:00 GMT
End time: 12-19-00 18:22:19 GMT
Currently: 12-19-00 18:22:24 GMT

IP Address	Active - %	Ratio	Poll - Timer	Ded - Timer	Poll - Tx bytes	Ratio	Ded - Tx bytes	Ratio	Index	Ratio
Total (all)	N/A	N/A	0:0:0:0:0	0:0:0:0:0	N/A	N/A	N/A	N/A		N/A
Average (all)	N/A	N/A	0:0:0:0:1	0:0:0:0:1	N/A	N/A	N/A	N/A	1	N/A

FIG. 39

Top Talkers

Total Users = 812

Total number of upstream bytes for all users = 12983.77 MB's

Total number of downstream bytes for all users = 116697.0 MB's

Average number of upstream bytes per user = 15.99 MB's

Average number of downstream bytes per user = 143.72 MB's

Date Range Searched: From to 2000-12-11 23:59:59

09981015 101701

CMID	Up MegaBytes	% of Total	Information	CMID	Down MegaBytes	% of Total	Information
10000002309	1078.07	8.30	Info Detail	10000000462	4544.09	3.89	Info Detail
10000015561	572.24	4.41	Info Detail	10000020500	3811.87	3.27	Info Detail
10000007207	385.66	2.97	Info Detail	10000000698	3701.56	3.17	Info Detail
10000017759	357.82	2.76	Info Detail	10000006338	3395.66	2.91	Info Detail
10000014703	347.42	2.68	Info Detail	10000005958	3342.65	2.86	Info Detail
10000000555	308.35	2.37	Info Detail	10000002126	3272.81	2.80	Info Detail
10000012777	217.74	1.68	Info Detail	10000001712	2838.66	2.43	Info Detail
10000021854	195.93	1.51	Info Detail	10000001410	2618.56	2.24	Info Detail
10000028475	195.15	1.50	Info Detail	10000013661	2540.65	2.18	Info Detail
10000002871	180.43	1.39	Info Detail	10000006955	2505.09	2.15	Info Detail
10000009310	174.94	1.35	Info Detail	10000010571	2246.71	1.93	Info Detail

FIG. 40

Detail Informaiton for CMID 10000002309

Breakdown By Protocol

Protocol	Upstream Bytes	% of Total	Downstream Bytes	% of Total
HTTPS	437990	0	3649130	0
IP	1077630687	99	1089385948	99
Totals	1078068677		1093035078	

Breakdown By IP Address

IP Address	Upstream Bytes	% of Total	Downstream Bytes	% of Total
24.221.206.66	1077630687	99	1089385948	99
24.221.206.71	437990	0	3649130	0
Totals	1078068677		1093035078	

Breakdown of Protocols for IP Address 24.221.206.66

Protocol	Upstream Bytes	% of Total	Downstream Bytes	% of Total
IP	1077630687	100	1089385948	100
Totals	1077630687		1089385948	

FIG. 41

0998015-101701
TOTAL "STO 8660

Bad cmid's encountered = 0

Statistics for Market ID 00000010, Market name = Phoenix (new)

Market ID	Date	HR	# of Subscribers	Mb Per Hour	Avg Per Subscriber	Avg MBPS	Peak # of MBPS
00000010	2000-12-12	00	000003	000000054.53	001817.00	000000.01	000000026.01
00000010	2000-12-12	01	000003	000000158.73	005291.00	000000.04	000000118.64
00000010	2000-12-12	02	000002	000000187.85	009392.00	000000.05	000000102.37
00000010	2000-12-12	08	000001	000000055.31	005531.00	000000.01	000000055.31
00000010	2000-12-12	10	000004	000000140.21	003505.00	000000.03	000000084.61
00000010	2000-12-12	11	000001	000000008.07	000807.00	000000.00	000000008.07
00000010	2000-12-12	12	000004	000000024.41	000610.00	000000.00	000000013.55
00000010	2000-12-12	13	000001	000000002.41	000241.00	000000.00	000000002.41
00000010	2000-12-12	15	000001	000000008.83	000883.00	000000.00	000000008.83
00000010	2000-12-12	17	000001	000000001.28	000128.00	000000.00	000000001.28
00000010	2000-12-12	19	000001	000000025.82	002582.00	000000.00	000000025.82
00000010	2000-12-12	20	000001	000000024.97	002497.00	000000.00	000000024.97
00000010	2000-12-12	21	000001	000000023.37	002337.00	000000.00	000000023.37

Statistics for udfg id 526, udfg name = south mtn 101-32/36

Total subscribers in SIF: 110

Udfg ID	Date	HR	Active Subscribers	MegaBits Per Hour	Avg Per Subscriber Per Second	Peak # of MBPS
526	2000-12-11	00	3	34.30	19.10	27.21
526	2000-12-11	01	5	541.81	180.181	388.12
526	2000-12-11	02	2	128.5	10.85	73.6
526	2000-12-11	03	5	761.39	253.239	731.53
526	2000-12-11	04	2	6.14	5.14	5.75
526	2000-12-11	05	5	442.1	14.221	403.91
526	2000-12-11	06	4	266.43	111.3	159.45
526	2000-12-11	07	2	2.99	2.59	1.94
526	2000-12-11	08	2	486.33	405.33	363.5
526	2000-12-11	09	4	312.11	130.11	221.18
526	2000-12-11	10	3	1111.96	617.136	797.57
526	2000-12-11	11	3	49.74	27.114	27.77
526	2000-12-11	12	4	50.63	21.23	41.30
526	2000-12-11	13	3	281.76	156.96	204.44
526	2000-12-11	14	6	598.4	16.224	319.80
526	2000-12-11	15	3	778.66	432.106	525.49
526	2000-12-11	16	3	12.77	7.17	11.60
526	2000-12-11	17	2	27.20	22.80	26.46
526	2000-12-11	18	5	14.80	4.280	6.12
526	2000-12-11	19	1	1.90	3.10	1.90
526	2000-12-11	20	5	44.86	14.286	35.99

FIG. 42

Detail for IP nnn nnn nnn nnn from to 2000-12-12 23:59:59

This is a protocol breakdown for traffic from this IP address. This includes all protocol types, including all TCP and UDP protocols. Two special protocols, TCP~ and UDP~, correspond to "unknown TCP protocol" and "unknown UDP protocol". This means that we don't really know what kind of traffic it is at this point.

Protocol	Downstream KBytes	Upstream KBytes
----------	-------------------	-----------------

Totals:

Up: Kbytes

Down: Kbytes

Protocol Summary - 2000-12-12 00:00:00 to 2000-12-12 23:59:59

This is a list of the most popular protocols on our network for the chosen date range. Measurements are in Megabytes and the data range is inclusive. Again, TCP~ and UDP~ represent "other" TCP and UDP apps which have not yet been identified.

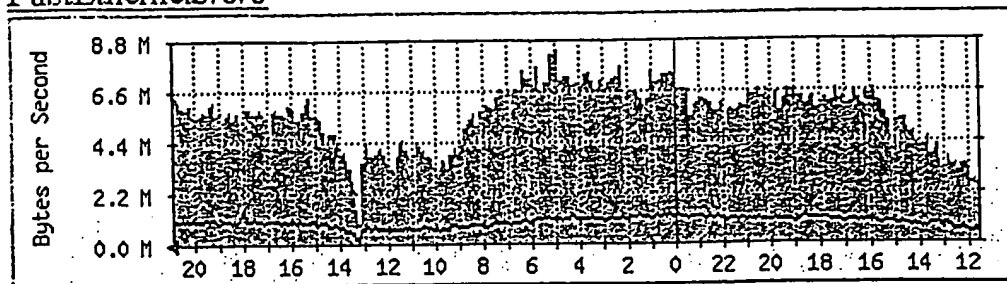
Protocol Name	Megabytes Transferred
NNTP	60997.67
TCP~	20632.16
NAPSTER	10798.85
FTP-DATA	8756.72
HTTP	6938.55
UDP~	3909.48
HTTPS	1215.48
POP3	571.60
AOL	183.04
FTP-CTRL	12.31
REALAUD	10.20
TELNET	8.48
SOCKET	6.92
SQLNET_N	4.31
SUNRPC_T	0.10
COMPUSRV	0.04

FIG. 43

Router Traffic Analysis

Daily Graph (5 Minute Average)

FastEthernet5/0/0



Traffic Analysis for FastEthernet5/0/0 edge01.phoenix.speedchoice.com

System: edge01.phoenix.speedchoice.com in

Maintainer:

Description: FastEthernet5/0/0

ifType: ethernetCsmacd (6)

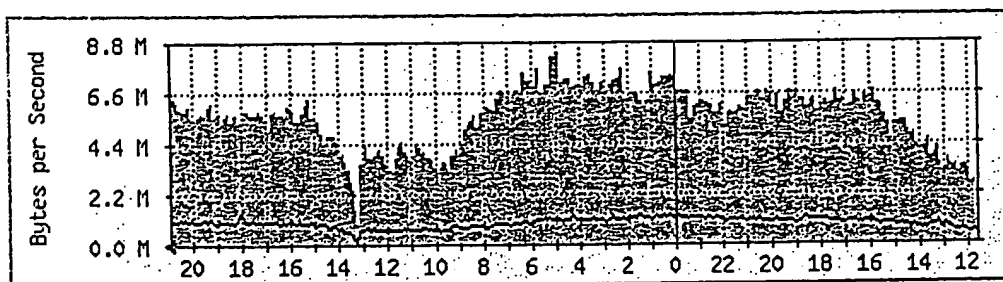
ifName: Fa5/0/0

Max Speed: 12.5 MBytes/s

Ip: 207.240.93.202 (edge01)

The statistics were last updated Friday, 15 December 2000 at 21:00,
at which time 'edge01.phoenix.speedchoice.com' had been up for 84 days, 10:51:32.

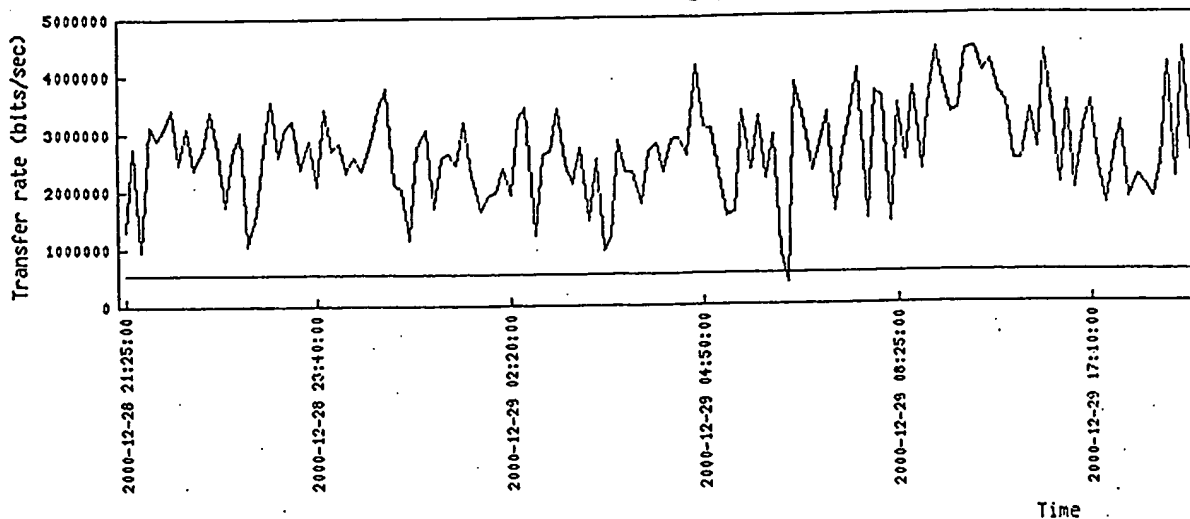
'Daily' Graph (5 Minute Average)



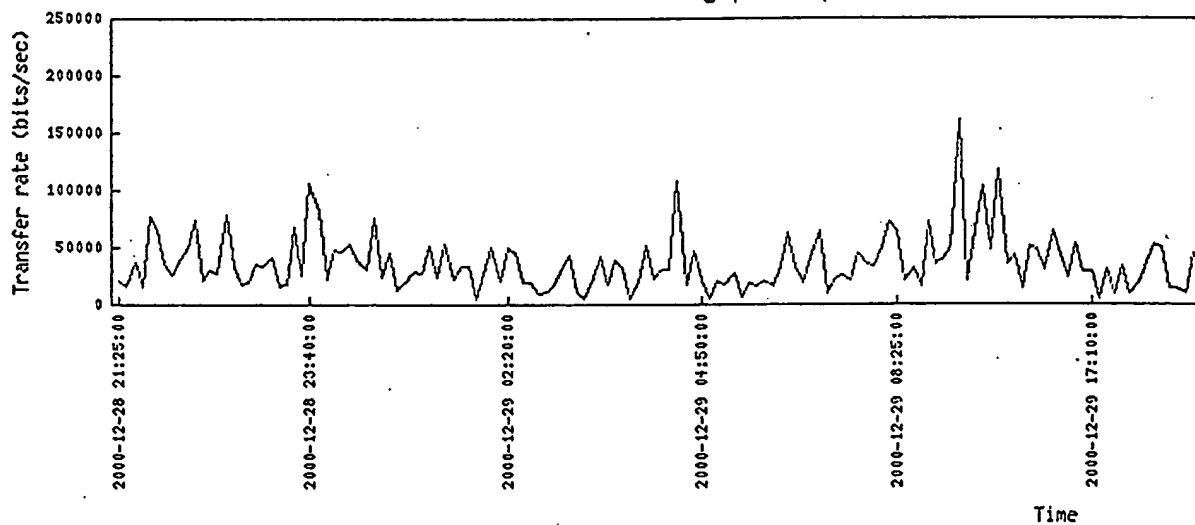
Max In: 8409.8 kB/s (67.3%) Average In: 5645.1 kB/s (45.2%) Current In: 6166.0 kB/s (49.3%)
Max Out: 1446.9 kB/s (11.6%) Average Out: 944.8 kB/s (7.6%) Current Out: 1017.5 kB/s (8.1%)

FIG. 44

Data Throughput (downstream)



Data Throughput (upstream)



Web Site Throughput (downstream)

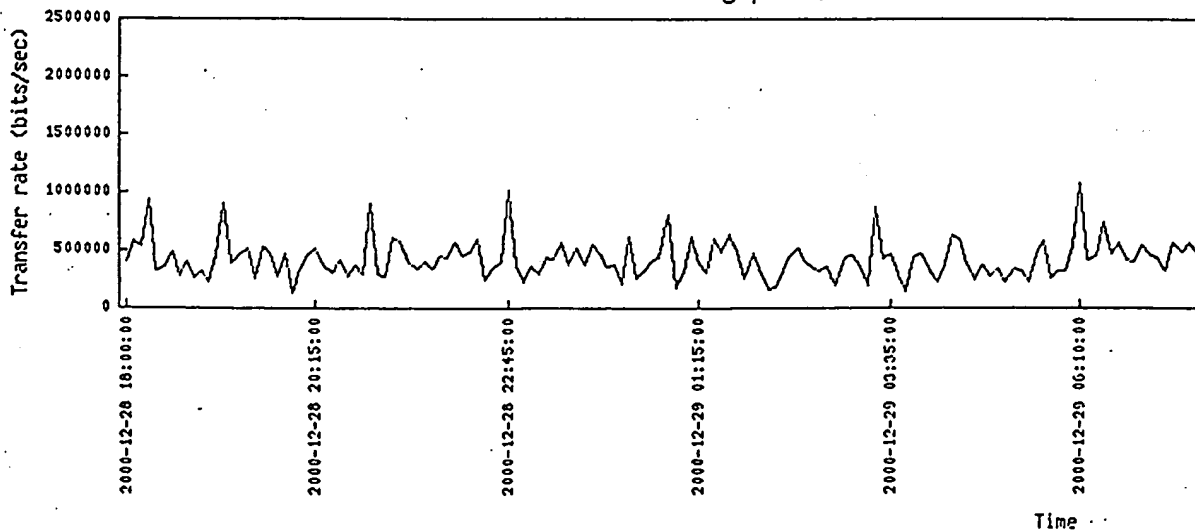


FIG. 45

TOPT-501360

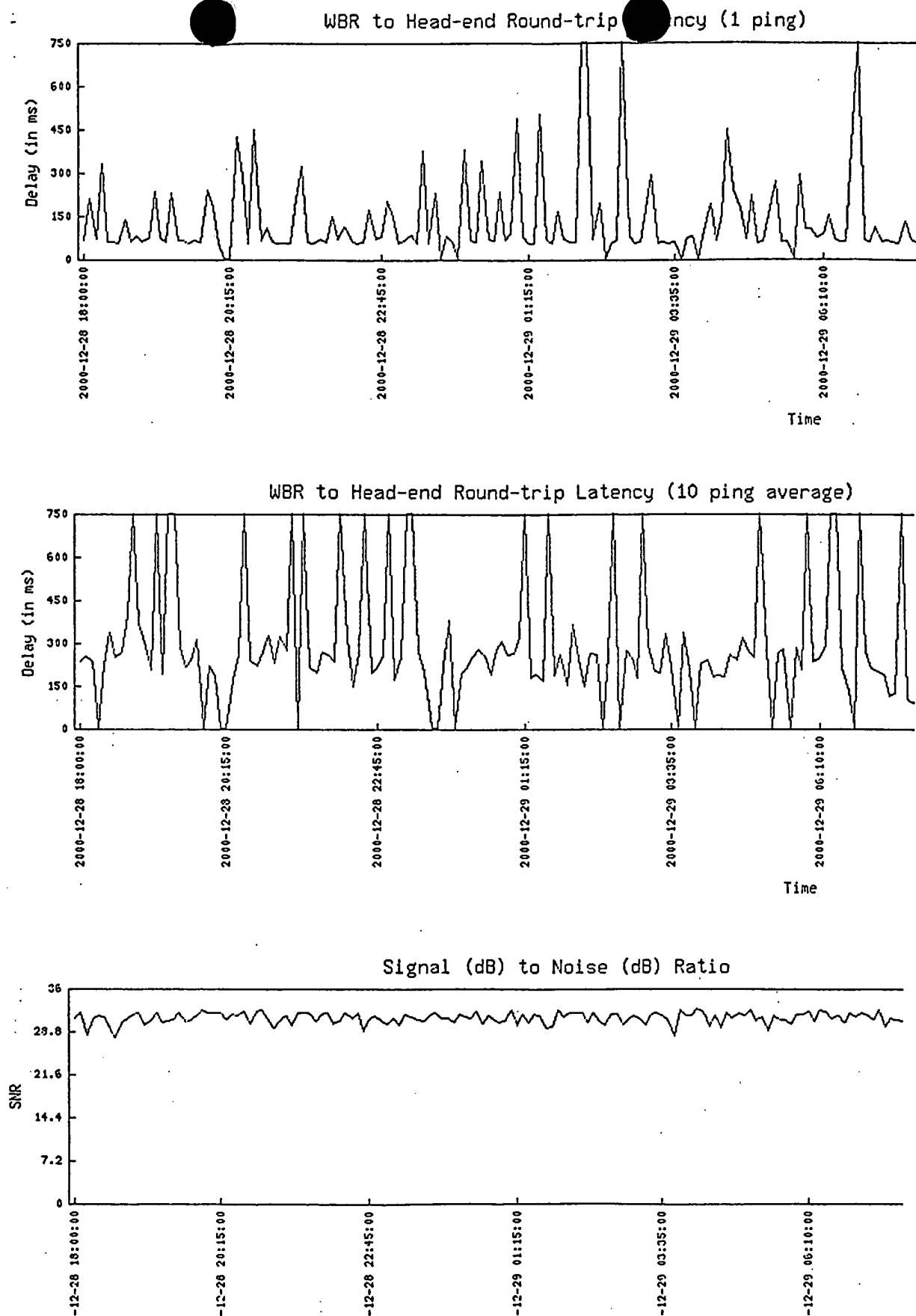


FIG. 46

Peak Time: 2000-12-28 12:25:00 CST

Peak Active Modems	Sampled Modems	Activity Ratio
905	7115	12.72%

Modem Counts		
Contention	Polling	Dedicated
0	847	58

Off Peak Time: 2000-12-28 06:00:00 CST

Off Peak Active Modems	Sampled Modems	Activity Ratio
152	7115	2.14%

Modem Counts		
Contention	Polling	Dedicated
0	98	54

Individual Peak Modem Counts		
Contention 2000-12-28 12:55:00 CST	Polling 2000-12-28 12:25:00 CST	Dedicated 2000-12-28 05:45:00 CST
10	847	88

Avg. Time Spent Per User		
In Contention	In Polling	In Dedicated
0.03 secs	0.71 secs	1.48 secs

FTP Rates At Off Peak 2000-12-28 06:00:00 CST		FTP Rates At Peak 2000-12-28 12:25:00 CST	
Downstream 3.54 Mbps	Upstream 85.83 Kbps	Downstream 2.21 Mbps	Upstream 32.02 Kbps

FIG. 47a

FOOTNOTES: 1039

Peak FTP Rate Downstream
2000-12-28 01:40:00
6.03 Mbps

Peak FTP Rate Upstream
2000-12-28 07:20:00
217.87 Kbps

2000-12-28 00:00:00 CST thru 2000-12-28 23:59:59 CST

Average FTP Rate Midnight-6pm (off peak)		Average FTP Rate 6pm-Midnight (peak)	
Downstream 2.69 Mbps	Upstream 51.31 Kbps	Downstream 2.01 Mbps	Upstream 38.27 Kbps

2000-12-28 00:00:00 CST thru 2000-12-28 23:59:59 CST

Average HTTP Rate Midnight-6pm (off peak) 470.34 Kbps	Average HTTP Rate 6pm-Midnight (peak) 384.46 Kbps
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FEC Corrections 32.55 : 1000	FEC Uncorrectables 1.53 %
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	Available Channels 230	
Max Functioning Channels 230	Min Functioning Channels 68	Avg Functioning Channels 226.44
Max Non-Functioning Channels 162	Min Non-Functioning Channels 0	Avg Non-Functioning Channels 3.56

Signal to Noise
Ratio
24.93 : 1

Requested to Scheduled
Modem Calibration Ratio
0.65 : 1

Downstream to Upstream
Bitrate Ratio
(All MEASUREMENTS ARE PER USER)

02:00:00 - 02:15:00 CST	10:00:00 - 10:15:00 CST	14:00:00 - 14:15:00 CST	22:00:00 - 22:15:00 CST
12-28 4.01 : 1	4.46 : 1	10.68 : 1	4.56 : 1

FIG. 47b

00981015-10101

The graph displays the bit rate of three video sequences (Sif1, Sif2, Sif3) and a threshold over time. The x-axis represents time from 2000-12-15 17:33 to 2000-12-15 23:23. The y-axis represents the bit rate in bits per second, ranging from 0 to 10,000,000. Sif1 (top line) shows significant fluctuations, peaking near 10,000,000 bits per second. Sif2 (middle line) and Sif3 (bottom line) show lower bit rates, generally below 5,000,000 bits per second. The threshold (dashed line) is constant at approximately 4,000,000 bits per second.

FIG. 48